

HEALTH MAINTENANCE ORGANIZATION AND THE HMO ACT OF 1973

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HEALTH MAINTENANCE ORGANIZATION AND THE HMO ACT OF 1973*

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I. INTRODUCTION

The Health Maintenance Organization (HMO) Act of 1973 was heralded as a major federal effort to change the health care delivery system by providing an alternative to the traditional solo practice fee-for-service system, in the form of the group practice prepaid plans, the health maintenance organizations. The HMO concept has been widely and favorably discussed. Its supporters, for example, have contended that HMOs can provide total health care at lower cost than the fee-for-service case. One of the implicit aims of the Act is to anticipate the passage of national health insurance with an alternative that has promise for controlling cost and assuring health care access irrespective of health status, income, or place of residence.

The Act authorized \$375 million over a five-year period to encourage development of HMOs, through direct financial assistance in the form of grants and contracts, loans and loan guarantees. Second, the Act added provisions to the Fair Labor Standards Act, requiring employers to include HMO options in their health benefit plans. Before these stimulants can be effective, however, existing and newly developing HMOs must comply with certain requirements--the minimum package of benefits, an open-enrollment policy, and the method for determining premium levels known as community rating.

The purpose of this paper is to evaluate the HMO Act of 1973. We will begin with a brief summary of the Act and follow with an evaluation

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of the Act in four select areas:

- o The assumptions in the Act regarding the HMO's ability to control cost, assure quality of care, and assure health care access.
- o The requirements imposed on HMOs seeking assistance and/or certification under the Act.
- o The impact of the mandatory multiple-choice requirement on employers.
- o The impact on HMOs since the passage of the Act and the likelihood of their role as a major competitor to the fee-for-service system.

II. THE HEALTH MAINTENANCE ORGANIZATION ACT OF 1973:
A SUMMARY OF THE LAW

The HMO Act of 1973 authorized \$375 million over a five-year period to encourage development of HMOs, through direct financial assistance in the form of grants and contracts, loans and loan guarantees. The encouragement also takes nonfinancial forms--employers are now required to offer an HMO option in their health benefits plan, and HMOs can override prohibitive state laws. The Act is also an experiment, an opportunity to evaluate what is hoped to be a major alternative to the health care delivery system based on the fee-for-service method of payment. Under this experiment, HMOs will be evaluated under different organizational modes and local conditions. The undisputed accomplishment of the Act is that it defined HMOs, for better or for worse.

DEFINITION OF HMOs

The HMO Act of 1973 is part of the Public Health Service Act, as Title XIII. The first two sections, Section 1301 and 1302, define HMOs as legal entities providing a prescribed range of health services, known as basic health services, to an enrolled population in return for a prepaid payment. In addition, an HMO must provide its enrollees an opportunity to obtain, or contract for, other optional health services on a prepaid basis, so-called supplemental health services, whenever feasible. (In the regulations, the wording was slightly changed from "must provide" to "must arrange to provide," thus allowing HMOs to arrange with hospitals not owned or controlled by the HMO to provide hospital services.)

The statutes define HMOs in terms of the range of services to be provided, the method of payment, the financial responsibilities to be assumed, the enrollment policy, the organizational requirements, and other matters.

1. The Range of Services

The HMO is required to provide a minimum package of services, the basic health services. Basic health services are defined as (1) physician

services, (2) inpatient and outpatient hospital services, (3) emergency health services (which are medically necessary), (4) short-term (not to exceed twenty visits) outpatient mental health services, (5) medical treatment and referral services for alcohol and drug abuse or addiction, (6) diagnostic laboratory and diagnostic and therapeutic radiologic services, (7) home health services, and (8) preventive health services (including preventive dental care for children, family planning services, and children's vision care).

In addition, the HMO must be ready to provide other health services, supplemental health services. Supplemental health services are defined as (1) intermediate and long-term care services (the regulations exclude custodial or domiciliary care), (2) vision care, dental and mental health services not otherwise included under basic health services, (3) long-term physical medicine and rehabilitative services, and (4) the provision of prescription drugs.

Health services which have been contracted for must be available, so as to insure continuity and proper treatment, 24 hours a day, 7 days a week, when medically necessary. When a member cannot obtain covered services, for example in the case of an out-of-area emergency, the HMO must reimburse the member for his expenses.

2. Method of Payment

Unlike fee-for-service practice, payment is to be made on a periodic basis without regard to the actual receipt of services. Two payments are distinguished. First, basic health service payments are fixed without regard to the frequency, extent, or kind of health services actually furnished; determined under a community rating system which pools the risks of all enrollees; and may be supplemented by nominal payments known as copayments, which are levied by the HMO at the time services are rendered. Copayments are not allowed to exceed 50 percent of the cost of providing any given service and the aggregate amount of copayments received by the HMO cannot exceed 20 percent of the total cost of providing all basic health services. Second, supplemental health service payments are similarly fixed, uniform, and determined on a community rating system. No mention is made as to whether copayments may be used with respect to supplemental health service.

The community rating system is defined as a means of determining a uniform payment on a per-person or per-family basis. The payments may vary with the number of persons in a family but must otherwise be the same. Payment rates may vary to reflect the cost of collecting payments, and may vary to serve special groups under other government programs such as Medicare and Medicaid.

Recent regulations added that supplemental health service payments may be based on a fee-for-service basis or in any agreed-upon manner. The purpose of this provision is to provide a degree of flexibility during the interim phasing-in period.

3. Financial Risk of the HMO

HMOs are required to assume full financial risk on a prospective basis for the provision of *basic* health services, except for three situations. First, the HMO may make other arrangements (e.g., obtain insurance) to cover costs of providing basic health services exceeding \$5000 per member per year. Second, other arrangements may be made to cover costs of services which have been provided outside the HMO (e.g., out-of-area emergencies). Third, should an HMO's costs exceed 115 percent of its income, it may make arrangements to recover its losses by not more than 90 percent.

4. Enrollment Policy

HMOs are required to have open enrollment 30 days or more per year, and accept applicants until they reach their capacity. An HMO is required to enroll persons who are representative of the population in the service area in terms of age, income, and other characteristics. Thus, an HMO may deny membership if it can show that open enrollment at that time will lead to an unrepresentative membership. An HMO may also refuse to have an open-enrollment period if it can show that open enrollment will jeopardize its economic viability by causing disproportionate increases of high-risk persons, i.e., persons who are likely to utilize its services more often than an actuarially determined average. An HMO cannot refuse to have an open-enrollment policy for more than three consecutive years.

Further, an HMO cannot expel or refuse to reenroll any member because of health status reasons or requirements for health services.

5. Organizational Arrangements

An HMO must have a professionally qualified medical group to provide basic health services or other arrangements established when the services are infrequent or unusual. The HMO may affiliate with other medical providers. The HMO's own medical group must have the HMO as the principal activity, pool and redistribute HMO-related income in a specified plan, share records, major equipment, and certain staff, and arrange for continuing education of the medical group.

Other organizational requirements are (1) the policymaking body of the HMO have membership representation, (2) there be meaningful procedures for resolving grievances, and (3) there be a quality assurance program.

Other Matters

The HMO must also provide medical social services, and an effective reporting system for the purpose of evaluating its performance.

FINANCIAL ASSISTANCE

Sections 1303 to 1305 specify the types of assistance an eligible HMO can receive:

| <u>Purpose of Assistance</u> | <u>Types of Assistance</u> | <u>Eligible HMO</u> | <u>Restrictions</u> |
|------------------------------|----------------------------|---------------------------------------|---|
| Feasibility study | Grants, contracts | Public or nonprofit private HMO | May not exceed \$50,000/and 90% of the HMO cost of the project, unless the HMO serves a medically underserved population |
| Initial development costs | Grants, contracts | Public or nonprofit private HMO | May not exceed \$125,000/HMO and 90% of the cost of the project, unless the HMO services a medically underserved population |
| | Loan guarantees | Private entities other than nonprofit | |
| Initial operation costs | Loans | Public or nonprofit private HMO | May not exceed \$1,000,000/HMO |
| | Loan guarantees | Private HMOs other than nonprofit | |

Section 1306 specifies the requirements an HMO must meet before it can apply for federal assistance under this law. In addition to being organized and operating according to the previous specifications, applicants must submit their plan to the State Health Planning Agency in their area (if any exists) for review and approval. Within the application to the Secretary there must be specification of the existing or anticipated target population, the membership of the organization, the methods, terms, and periods of enrollment, estimated costs per member, sources of professional services and the organizational arrangements for providing the services for an on-going quality assurance program, sources of prepayment and other payment for services, facilities, and other capital investment, sources of financing, and so on.

Section 1307 makes general provisions for the administration of the assistance programs. It further states that the highest priority for assistance funds will be given first to those HMOs serving medically underserved areas, and secondly, to those HMOs which are considered to be the more economically viable. Medically underserved areas are defined as geographic areas (rural or urban) or population groups which have a shortage of personal health services.

HMOs serving Medicare and Medicaid recipients are to provide such members only those services for which they can be compensated under the Medicare and Medicaid provisions. The payment for these services are not to be fixed by a community rating system, since these programs have their own payment determinations. With these exceptions, HMOs serving Medicare and Medicaid recipients are to be organized and operated in accordance with previous specifications.

Section 1308 specifies the provisions relating to loans and loan guarantees, such as the right of recovery, waivers, and sales of loans.

Section 1309 details the authorizations:

| | | |
|-----------------------|--------------|-------------------------|
| Grants and contracts: | \$25,000,000 | FY ending June 30, 1974 |
| | 55,000,000 | 1975 |
| | 85,000,000 | 1976 |
| | 85,000,000 | 1977 |

Loans and loan guarantees: \$75,000,000 total for FY74 and FY75.

OTHER PROVISIONS TO ENCOURAGE HMOs

Within Section 1310, the law requires every employer who is subject to the minimum wage provisions of the Fair Labor Standards Act of 1938, and employs at least an average of 25 employees, to include in their employers health benefit plan the option of joining a qualified HMO. Employers must offer this option if a qualified HMO is serving the area in which the employees reside. If the area is served by two different types of HMOs, a prepaid group practice model and a foundation for medical care model, the employers must offer the employees the choice of joining either. An employer does not have to pay more for an employee's membership in a qualified HMO than he pays for any other health benefit plan offered.

Because many states had laws which effectively prohibited the development of HMOs, Section 1311 preempts such restrictive state laws for any qualified HMO which either obtains financial assistance or is certified to participate in employees' health benefits plans.

Sections 1312-1315 provide for the continued regulations of the HMOs. For those HMOs which received assistance, or were included in a health benefits plan on the basis of Section 1310, the Secretary is authorized to bring civil court action in cases where the HMO failed to provide the basic and supplemental services, or to provide such services in the manner prescribed, or did not organize or operate in the manner prescribed.

The HMO Act also contains Part K, Section III, of the Public Health Service Act, which provides requirement for a program of research and evaluation to study the effectiveness, administration, and enforcement of programs, for the assurance of health care quality. The Secretary is required to make an annual report to the President and Congress regarding the quality of health care in the U.S. and the evaluation of the quality assurance programs. The latter sections do not appear to have direct relevance to HMOs except to the extent that HMOs are required to have a quality assurance program.

Since the passage of the Act, the basic regulations have been proposed and finalized as of October 1974. The regulations covering Section 1310--mandatory multiple-choice requirement for employers to offer the HMO option--have, as of this writing, not been finalized.

References:

1. U.S. Senate, Subcommittee on Health of the Committee on Labor and Public Welfare, Health Maintenance Organization Act of 1973, S.14, Explanations of Act and Text of Public Law 93-222, 93rd Congress, 2nd Session, February 1974.
2. "DHEW, Public Health Service: Health Maintenance Organizations," *Federal Register*, Vol. 39, No. 203, Part III, October 18, 1974.

III. THE OBJECTIVES AND ASSUMPTIONS OF THE HMO ACT OF 1973

The Act was designed to promote HMOs with the understanding that HMOs had advantages in the areas of (1) cost control, (2) assurance of quality of health care, and (3) improvement in the distribution of health care resources (Conference Report, Appendix, p. 41). By the provisions of the Act, it was assumed that the major barriers to HMO development could be reduced by financial assistance, federal override of state laws prohibiting HMO's development, and mandatory employer offering of the HMO option to their employees.

In this section we inquire into the realism of these assumptions. How effective are HMOs in controlling costs and how is it accomplished? How do HMOs assure quality of care and how is it measured? Do HMOs hold the promise of bringing health care to medically underserved areas? And finally, are the encouragements provided by the Act adequate to overcome the barriers to HMO development and allow it to become part of the mainstream of health care? (Throughout this section the literature cited often refers to prepaid group practice plans. We have made them interchangeable with HMOs for the moment.)

A. COST CONTROL

The HMO is commonly attributed with the ability to control cost, first because the HMO emphasizes preventive and maintenance care rather than the more expensive curative care. Second, because the provider-organization is paid a fixed prepayment for an individual's "total" health care, the provider has the incentive to deliver a mix and level of services in the most economical manner so as to maximize the difference between the fixed revenue and the costs over which there is some discretionary control. Third, the provider in group practice has the opportunity as well as the incentive to take advantage of various cost-saving measures, improved manpower productivities, and scale economies not commonly available to the solo practitioner or to associations of independent practitioners. Each of these cost-control arguments may be questioned, however.

First, preventive care, unlike curative care, is subject more to the patient's decision (the education of the enrollee regarding symptoms, etc.) to obtain care than to the physician's decision to provide treatment. The HMO can only make preventive care available, and perhaps provide health education. Of course, the enrollee has an incentive to utilize such services, having paid for them beforehand save for nominal copayments associated with the use of services and the time costs.

A more serious reservation centers on the cost-effectiveness of preventive care, such as screening. S. O. Schweitzer (1972) notes that preventive care comes at a high cost in terms of the resources used, and has minimal impact. The increasing questioning of the value of extensive screening is reflected in Kaiser Permanente abolishing its much heralded annual multiphasic screening examination in favor of a less frequent regimen used when symptoms appear. He notes that the cost-effectiveness of screening depends on the probabilities of error, the cost of the test, the prevalence of the disease, and the population to which the test is administered.

Other investigators, such as Bates, et al. (1972), Collen, et al. (1970), Vecchio (1966), and Weil (undated) generally have unfavorable conclusions regarding the cost-effectiveness of screening, particularly those conducted without prior symptoms.

If we presume that HMOs are profit-maximizers, there is little justification for believing that they will advocate extensive use of screening, or if they do, one would have to question the cost-control advantages of HMOs. Particularly if the HMO is a profit-maximizer in the short run, it is less likely that HMOs will encourage rapid increases in costs in the hopes of saving costs that would have occurred in future periods when the patient may or may not be enrolled.

Second, the provider's incentive to save on his costs may be questioned. Providers at the physician and organizational (hospital) level have not been reputed to be efficiency conscious. Rather, they have been reputed to being quality-maximizers and thus not necessarily cost-effective. Glasgow (1972, p. 8), for example, questions the degree to which such economizing behavior occurs, given that most physicians are trained to operate independently and in isolation from one another,

while such economizing behavior requires very broad-based coordination. The effectiveness of the HMO to provide that broad-based coordination cannot be assumed to be present merely on the basis of the expected incentives; it depends on management capabilities to direct physicians and to provide proper incentives.

Further, the ability of the HMO to minimize cost depends on the control it has over the total care of the patient. Not all HMOs, for example, own and control their own hospitals or extended care facilities, or equally cover such services in the benefit coverage. For example, HMOs covering home health services are expected to utilize this option to reduce expensive extended hospital stays; but HMOs not offering home health services will be unable to make such a cost trade-off.

Third, the HMO's cost advantages in sharing of facilities, equipment, and clerical and other personnel are not unique to HMOs. Glasgow (1972, p. 5), for example, points out that solo practitioners can contract with specialized firms, thereby eliminating some of the advantages of HMOs which internalize these functions.

With respect to the argument that HMOs can reduce costs by taking advantage of scale economies, little empirical work has been done to substantiate this claim. Bailey (1970) summarizes the conjectural basis for believing in the existence of scale economies in medical group practice, and the fundamental but questionable underlying assumptions. However, it is commonly believed that there is a minimum size below which an HMO is not likely to realize financial returns, let alone be able to provide care at lower costs. HMOs with less than 25 to 30 physicians and a membership population one thousand times larger are considered inefficient. In 1969, less than 10 percent of the operating group practice prepayment plans would have met this size criteria. The exceptions are the most successful HMO-type organizations such as Kaiser, HIP of New York, and Group Health Cooperative of Puget Sound.

The notion that HMOs lead to reduction or control of costs has been generally accepted without critical examination. Several studies, which we shall summarize, have made findings favorable to HMOs; however, (1) they have certain methodological problems, and (2) they have been conducted on a relatively small sample of HMOs which have proven to be

successful. Further, these studies have not been conducted on the strict HMO model as defined by the HMO Act, since few if any qualify on the basis of the statutes.

The amount of savings of the HMO over the fee-for-service mode has been estimated to range anywhere from zero to 60 percent and is commonly believed to be around 20 percent (Health Maintenance Organization, 1971). The cost savings have been variously linked to shorter hospital stays, less surgeries, and higher physician productivity.

Of the possible HMO organizational structure (e.g., hospital-based with centralized control; nonhospital-based; university plans; physician-run plans; for-profit plans), only the large, hospital-based, centralized control model is considered likely to yield a reduction in costs (Health Maintenance Organization, 1971; Glasgow, 1972; Greenburg and Rodburg, 1971). First, the nonhospital-based plan (1) pays hospital charges rather than costs, or (2) must require the enrollee to have Blue Cross or other hospital insurance. In the first case, one would suspect that because the HMO must reimburse hospitals, they will attempt to reduce hospital admissions. If they cannot, then their costs and premiums will be higher than the hospital-based plans. In the second case, one would expect that there will be lower incentives to reduce hospitalization similar to the moral hazard argument.

The HMO in general, however, is expected to reduce hospital utilization and costs. Greenburg and Rodburg (1971, p. 925-7), for example, cite three reasons. First, the HMO member has no incentive to seek medical services on an inpatient basis since there is no difference in cost to the patient, unlike a Blue-Cross-covered person whose inpatient care is covered only. Similarly, the HMO physician has no financial incentive to encourage inpatient care since his income is not changed as a result. Second, the HMO has no incentive to maintain a high occupancy rate, since its income is fixed, but its costs will rise with an increased occupancy rate. Third, the HMO has the alternative and the incentive to substitute less expensive intermediate care for inpatient hospital care. If this is true, then one would expect that the HMO with control over its hospital will have less beds per capita (enrollee), higher occupancy rates, shorter length of stay, and greater use of outpatient services than the fee-for-service sector.

Another cost-control feature of HMOs is that HMO physicians have no incentives to increase the number of services provided since, unlike the fee-for-service system, there is no direct link between income and the quantity of services rendered. Physicians are thus said to be encouraged to use the most appropriate services (Greenburg and Rodburg, 1971, p. 908). Donabedian (1967), for example, notes that there are less discretionary surgeries performed by HMO physicians.

Higher physician productivity in HMOs is another prominent argument. HMOs are considered to have the potential for increased productivity by virtue of the greater proportion of ancillary staff which enables a better division of labor. Nevertheless, studies have failed to show better manpower utilization in HMOs (Glasgow, 1972, p. 7).

Methodological Problems: Cost Control

The most common method of measuring cost control or the reduction of cost is to simply compare one group which is enrolled in an HMO with another group that is not enrolled and is presumably using the fee-for-service system. The comparison is made on the cost of "total" health care. The emphasis in total health care is necessitated by the idea that HMOs tend to substitute physician and outpatient services for hospital services, tend to reduce admission to and stays in hospitals, and tend to have a lower rate of surgery. Focusing on outpatient physician costs is more likely to show HMOs at a disadvantage, and focusing on inpatient costs is likely to show HMOs at a greater advantage. It is the net effect which is the true test.

One of the first problems is identifying and selecting two comparable groups whose only difference is the method of receiving services. Groups would have to be comparable with respect to age, sex, income, and employment status, as proxies for health status or expected utilization. Expected utilization is dependent on insurance coverage, and thus insurance or insurance-like coverage (the HMO coverage) has to be comparable or adjusted for. Adjustments also have to be made for geographical area, since areas will vary in the cost of providing health care.

Another problem is to obtain meaningful health expenditure data. Since HMO members utilize services outside of the plan to a significant extent, HMO data per se tend to be underestimates. Donabedian (1969, p. 9-10), for example, cites studies that show between 14 and 39 percent of the enrolled population uses services outside of the plan. The percentage varies with the plan and its coverage, the kind of service studied, and the time period over which measurements are taken (the longer the period, the greater the percentage).

Per-capita total health expenditures, however, do not indicate how costs are controlled or reduced. Utilization rates have also been studied. Donabedian (1967, p. 10-16), however, notes that these rates hide a number of factors. First, utilization rates may be appropriately increased through better education of the enrolled population and better diagnostic procedures. Second, utilization rates may be inappropriately increased through a lack of control over excessive treatment, or over-investigation, or the lack of proper incentives. He thus suggests that utilization rates be broken down into diagnostic groups and then compared. HMOs generally have lower hospital utilization rates for discretionary surgeries such as tonsillectomies. However, this was not adjusted for outside utilization.

Given the great variety of HMOs, cost comparisons among HMOs is another approach used to identify the significant positive attributes of HMOs. HMOs vary with respect to the scope of services covered, the characteristics of the population enrolled, the type of organization (e.g., profit versus nonprofit, consumer versus provider-sponsored, or hospital-based versus nonhospital-based), the scale of operations, the use of ancillary personnel, and so on. Following are the results of three studies which examine the cost advantages of group practice prepayment plans.

Three Studies on HMOs: Cost Control in Medicare and Medicaid Populations

Studies done on Medicare and Medicaid covered persons comparing HMO and non-HMO health care costs have minimized the difficulties of selecting comparable groups and obtaining complete health care expenditures. Since Medicare and Medicaid programs cover the same relatively

comprehensive health care services for the two groups, the reimbursement payments are comparable and likely to capture the true cost of total health care.

The first study we looked at is the HIP Incentive Reimbursement Experiment, 1969 and 1970 (Jones, et al., 1974), covering Medicare beneficiaries. HIP of New York had approximately 8 percent of its total enrollment in 1970 under Medicare. Using the HIP Medicare population, a similar group was selected from the Medicare records, controlling for age, sex, and county of residence. These two groups were compared on the basis of utilization and reimbursement payments for five types of benefits: hospital care, extended care, home health care, outpatient services in hospitals, and physicians' services. The definition of cost control was the change in reimbursement charges between 1969 and 1970, and they therefore concluded that HIP was able to meet its objective of cost containment, despite the fact that HIP-enrolled Medicare beneficiaries had higher reimbursed per-capita charges than nonenrolled beneficiaries in 1969 and 1970. For 1969, HIP had charges of \$442, and in 1970, \$438, while non-HIP beneficiaries had \$401 and \$436, respectively.

The 1970 data reflected the effects of an incentive experiment and thus the conclusion might have been better stated by saying that HIP proved more amenable to incentive measures aimed at cost control and did not reflect the qualities inherent in the HMO as measured by the 1969 data.

Certainly, the HIP data do not indicate any large savings from HMO enrollment of Medicare beneficiaries as would be indicative of previously cited studies. The utilization data, however, do seem to indicate shorter lengths of stay in hospitals, and greater utilization of extended care services and home health services, as would have been expected.

Another problem in interpreting the findings is that the data do not include out-of-pocket costs. Since HIP members do not have to pay the deductible and coinsurance, and the non-HIP members do, the total cost figures underestimate the HIP advantage, to the degree that they are not covered by the capitation payments.

It would have also been interesting had a random sample of Medicare beneficiaries been selected first and then a matching HIP sample taken.

If HIP had a more favorable sample (which is likely, since HIP does have minimal screening), the findings of Jones, et al., may reflect a bias favorable to HIP.

The second study, conducted by Westat, on Group Health Association, Inc. (GHA) of Washington, D.C., was for a Medicaid population (1975). Several comparisons are made of the annual per-capita cost and the hospital utilization rates between the GHA Medicaid group and a Medicaid group using the fee-for-service system. This study concludes that for the same benefit package, the GHA group made a sizable 21 percent saving compared to the Medicaid fee-for-service group (averaged over three years, 1972-1974). The primary source of the savings was the 40 percent lower hospital utilization rate of the GHA group relative to the Medicaid fee-for-service group. The Westat study had the following characteristics:

- o The GHA study group was drawn on a voluntary basis (introducing a question of self-selection).
- o The GHA study group could not exceed 1,000 out of a total enrollment in GHA of 80,000, or 1.25 percent. (Question of whether percent of Medicaid group could significantly affect costs, and question of how valid findings are in recommending HMO approach so as to reduce Medicaid costs.)
- o The GHA study group had less permanently disabled cash recipients, less medically indigent, and less adults, all of which tend to be high-risk and high-cost groups, nor were adjustments made for these differences.
- o The GHA study group was provided with additional benefits including transportation benefits, basic dental services, prosthetic devices, and outreach services. When these cost items are included, the savings dropped from an average of 37 percent to 21 percent (three-year average).
- o A more critical problem with the Westat study, however, is that the cost figures do not reflect true costs. For example, in FY74, GHA incurred losses as a result of a decision made in FY73 to reduce the monthly capitation rate from \$28.66 to \$22.00; their losses for FY74 totaled \$89,565. In a sense, Medicaid

incurred savings at the expense of GHA, who experienced a loss in serving the Medicaid population. If the experiment had continued, GHA may well have increased the capitation rate to reflect their true cost and thereby reduce the Medicaid savings.

A recent article by Corbin and Krute (1975) compared the effectiveness of seven group practice prepayment plans (GPPPs) in controlling costs. Included in their sample are two nonhospital-based and five hospital-based GPPPs. The two nonhospital-based plans had substantially higher out-of-plan physicians' service utilization. All seven cover hospitalization and it is assumed that they are equally comprehensive in benefit structure. In the case of the two nonhospital-based GPPPs, hospitalization is covered through insurance--e.g., contracts with Blue Cross. Such contracts, the authors contend, result in lower incentives (the moral hazard problem?). The data covered the 1969 and 1970 periods.

In evaluating the cost of reimbursement savings of GPPPs, Corbin and Krute take GPPP Medicare beneficiaries and their total reimbursement expenditures per member and compare it to those of a control group. For each GPPP, a control group is derived from non-GPPP Medicare beneficiaries in the same geographic location. There are no controls for possible differences in age, sex, income, education, and other socioeconomic characteristics that affect utilization of health care services. It is ironic that they mentioned these variables as important in terms of the variations in the seven GPPPs selected and not with respect to the control group.

Their findings may be summarized as follows:

1. GPPPs tend to have higher physicians' services reimbursement expenditures per Medicare beneficiary (in-plan and out-of-plan) than the control group.
2. GPPPs tend to have lower inpatient hospital service reimbursements, per Medicare beneficiary, than the control group.
3. GPPPs tend to have lower total reimbursement expenditures (physicians' and inpatient hospital services), except for two plans which are nonhospital-based.

4. Hospital-based GPPPs tended to have lower out-of-plan physicians' service utilization, and lower average out-of-plan reimbursement per Medicare plan member.
5. With respect to other services, such as the extended care facility (ECF), hospital outpatient (HO), and home health agency (HHA) services, reimbursement expenditures to GPPP versus non-GPPP Medicare beneficiaries:
 - a. ECF--there were not discernible patterns.
 - b. HO-GPPP reimbursements were generally lower than the control group, except for one nonhospital-based GPPP.
 - c. HHA--the five hospital-based GPPPs had significantly higher reimbursement expenditures over their controls, while the two nonhospital-based GPPPs had lower to equal reimbursement expenditures relative to their control group.

They conclude that GPPPs do provide services at lower costs in general. The favorable cost experiences, moreover, are related to (1) low utilization of out-of-plan physicians' services, and (2) plan control of hospital facilities. They also conclude that to the degree GPPPs do not have these favorable conditions, they will not be able to feasibly function on a risk basis as used by HMOs, but can on a cost basis.

In this article, the authors attempted to do two things. First, they examined GPPPs relative to non-GPPP Medicare beneficiary reimbursement expenditures. Second, they examined possible variations within GPPPs as they might affect the incentives to reduce the cost of health care to their members.

With regard to the first part, they failed to fully control for variables that might affect utilization, age, sex, income, etc. They also failed to discuss eligibility criterion that might be used by GPPPs, if any. (It is interesting to note that HMOs are required to have open enrollments under Medicare, and to have a reasonable cross-section of the area's population.)

With respect to the second part, they do not explicitly describe the services covered, whether in-plan or out-of-plan, except to say that utilization and reimbursement expenditures for out-of-plan services do

vary. The reader is left to assume that all plans are equally comprehensive in benefit structure but not in service organization. Another problem is that to say more about variations in GPPPs, they should have more GPPPs, with varying benefit structures, sizes of plan membership, proportions of membership under Medicare, etc. Similarly, the extent to which utilization of extended care facilities, home health agencies, and other alternatives to inpatient hospital care might be significantly affected by the occupancy rate of affiliated hospitals is never discussed. Also, it is not clear how the Medicare beneficiaries' reimbursement expenditures vary from the other GPPP members' premiums or prepayments. There is also a question regarding one of the plans sampled. While it is not mentioned in the article, one of the plans has been participating in an incentive reimbursement experiment, and apparently for the period being used in the Corbin-Krute article.

To summarize, what little work has been done on the cost-control advantages of HMOs has been of limited scope, that is to say, limited to a few established organizations. There has been no systematic analysis of the full range of HMO variations, nor how the successful HMOs may differ from the newer, less well-established HMOs, or even those that have failed. Since most of these studies have focused on Medicare and Medicaid populations, the data are the expenditure amounts paid out by Medicare and Medicaid, and do not take into account faulty HMO capitation rate determinations which leave the HMO to absorb losses. Nor have there been broader attempts to look at the cost control associated with the non-Medicaid, non-Medicare populations.

B. QUALITY OF HEALTH CARE

HMOs have been attributed with providing better quality of health care for a number of reasons (Greenburg and Rodburg, 1971, pp. 928-31). First, it has been claimed that prepaid plans have better physician selection. Since it is assumed these plans have an incentive to avoid inferior care, which would increase costs in the long run, it is further assumed that they will select physicians of high quality from the pool of applicants. They can also be selective, given that they will have only a small number of positions to fill at any one time. Second, these

group practices encourage consultation among staff members. Greenburg and Rodburg (1971, p. 900) suggest that consultation among fee-for-service physicians is more limited than among HMO physicians. Third, unified medical records enable greater continuity of care and greater potential for effective peer review within the team. Fourth, physicians are often encouraged and allowed to continue their education without loss of income. Fifth, physicians have fixed hours and are less overworked. Sixth, peer review can be more effectively practiced, since physicians do not depend on referrals, and since better records are available.

The quality-of-care arguments attributed to HMOs have been purely conjectural, however. Even if they are deemed to hold true, it is not clear that these factors, such as physician selectivity, greater consultation, more peer review, and so on, will in fact result in better quality of care. Bob Brook (1974) summarizes the many problems associated with measuring the quality of care in general, and relating these measures to the characteristics of the physicians and institutions. At best, then, it would seem tenuous to attribute better quality of care to HMOs. Donabedian (1967, pp. 20-24) surveys several studies concerned with measuring quality of care in prepaid group practice, and concludes that while little is known about the levels of quality of care attained, there is little to suggest that technical quality suffers and much to suggest that it is maintained and safeguarded. It should be noted that technical quality refers to such questionable indices as subscriber perceptions, use of preventive services, and technical quality of physicians and hospitals. He does cite one study done on HIP of New York which attempted to compare health status of HIP members with the New York City populations, but the results were inconclusive.

C. REDISTRIBUTION OF HEALTH RESOURCES

The third assumption commonly made with respect to HMOs is that they will improve the distribution of health resources. HMOs, as a form of group practice, are assumed to be able to attract professional health and medical manpower to remote rural areas more effectively than the solo-practice system. Supposedly, they will provide the facilities,

equipment, ancillary personnel, and collegiate support which are likely to be lacking in a rural area. Greenburg and Rodburg (1971, p. 937-8) have noted, however, that most group plans, especially the largest and more successful, have been concentrated in urban areas. "Rural poverty, financing difficulties, and population dispersion, create obstacles to group practice prepayment plans." One common approach has been to have rural HMOs be partly financed on a fee-for-service system. They also note that the lack of interest and leadership to organize rural plans is a barrier to HMOs in medically underserved areas.

Similarly, the HMO is presumed to be more amenable to covering low-income groups, in that they provide one-class medicine. Greenburg and Rodburg (1971, p. 934-36) suggest, however, that HMOs may require government assistance should they be required or attempt to serve low-income or aged groups, since these groups are expected to use or demand more services, and thus raise costs and premiums. Secondly, they have reservations concerning the degradation of the HMO image should HMOs become associated with mainly serving the poor, i.e., second-class medicine. The HMO, furthermore, is unlikely to be attractive to persons with greater mobility, or employer groups with highly dispersed workers. Greenburg and Rodburg believe that HMOs, at least initially, require a large, stable, and relatively committed membership. This may retard an HMO's growth and cause it to adopt restrictive policies regarding enrollment.

D. BARRIERS TO HMO DEVELOPMENT

Whatever presumed advantages HMOs or HMO-like organizations may have, there still remain barriers to HMO expansion: (1) acceptance by consumers, (2) acceptance by physician and other providers, and (3) financial, legal, and managerial barriers. We shall briefly summarize the literature on these three points.

1. Acceptance by Consumers

Donabedian (1967) reviewed studies done on the factors affecting the dual choice between HMO's (actually group practice prepayment plans) and alternative coverages such as provided by Blue Cross-Blue Shield.

The studies reviewed show 20 to 60 percent of persons favoring HMO-like options, although there appears to be great variation on the percentage depending on the specific HMO and the alternative coverage. Kaiser, for example, has a higher percentage of acceptance. The major reasons why HMO options are rejected are (1) limitation of geographic service area, (2) limit on free choice of physician and in some cases choice of hospital, (3) ideological opposition, and (4) better alternative plans/options.

Donabedian suggests that the more important factors were the pragmatic evaluation of specific attributes of the rival plans, which in turn depended on knowledge and the predisposition to obtain knowledge. He also suggests that the expectation of greater need for protection against medical care expenses affected the predisposition to seek more information, and to weigh the HMO more carefully. For example, he found that enrollees tend to be those who were older, married, with a large number of children, home owners, and those who did not belong to the lowest income groups. The possibility of HMOs serving a biased sample of the population raises questions of adverse or self-selection within large group enrollments.

2. The Acceptability of Group Practice to Physicians

Greenburg and Rodburg (1971, p. 946-49) summarize the attractions and disattractions of HMOs from the point of view of the physician. Essentially, the advantages come down to the more regular hours, the potential for specialization in the team approach to medicine, the freedom from having to worry about the patients' ability to pay, and the freedom from administrative chores.

The disadvantages are the limits to and levels of income of the HMO physician relative to the fee-for-service sector, and the loss of independence. They argue that the HMO tends to narrow the variances in income, and to even out the income stream over time. The income of the first years are higher, but the income of the latter years are lower than the average of the fee-for-service physician. This would suggest that HMOs may be constrained in the competition for physicians, and may be resorting to attracting the physicians when they are younger and at

the lowest salary levels. At the older age levels, they may be relying on the physician who has either left private practice for a quieter life, or on the physician who has remained in the group practice and has not been able to establish a private practice. The HMO physician's income stream, however, cannot be easily compared to the non-HMO physician, given possible differences in productivity and the problems in measuring private practice income, which may reflect the life cycle of the physician who builds up his clientele in the early years of practice.

Donabedian (1967, p. 8) cites the high turnover in medical staff, and the interchangeability of physicians as factors which make it difficult for patients to identify with the doctor as their physician. This difficulty may also affect the physicians' attitudes. The turnover rate could be used to measure physician satisfaction in HMOs, although its counterpart in the fee-for-service system is not clear.

It might be added that the current situation in malpractice insurance will certainly not harm HMOs more than the fee-for-service sector. Information regarding malpractice in HMOs is not available, although it does appear that the HMO grievance procedures could minimize malpractice suit initiation, if not resolve them.

3. Financial, Legal, and Managerial Barriers

Greenburg and Rodburg (1971, p. 949) cite the serious financial difficulties of HMOs to initiate and expand their operations. A large amount of money is required up front for feasibility studies, planning, plant equipment and personnel, and for financial stability to cover the inevitable losses of the first years of operation. Money has often had to come from insurance companies which can see possible returns. Other sources, such as unions or foundations, tend to place heavy restrictions on HMOs regarding future expansion. To the extent that initial outlays and initial losses are major barriers to HMO expansion, the Act does provide an important stimulus. A prospective HMO may receive up to \$50,000 in order to determine the feasibility of developing an HMO (one additional grant or contract for a feasibility survey can be made to the prospective organization); up to \$125,000 for planning and \$1,000,000 for initial development costs (again, this contract can be

renewed for one year); and a loan of up to \$1,000,000/year, not to exceed \$2,500,000 in the aggregate, to help meet initial operating costs of an HMO. It is not clear, however, that this financial assistance will be sufficient to eliminate the financial barriers confronting HMOs. We know of one HMO--Healthcare, Brooklyn, New York--which was forced to close after incurring losses of \$1.5 million during the first year of operation. They had projected an enrollment of 12,000, but were only able to enroll 400 members during the first year.

There are managerial barriers as well: the lack of personnel trained to deal with the organization and management of HMOs. If the Act should spurn rapid expansion, the current difficulties are likely to be exacerbated. It is hypothesized that managerial barriers will prove to be a serious problem in promoting economically viable HMOs. The problem may be measured by the high rate of failure in HMOs, particularly in the formative stages.

Then there are the organized medical interests to contend with, particularly in the area of advertising. Organized medicine has banned advertising as part of the professional ethics argument. This restriction could jeopardize the ability of HMOs to compete with insurance companies which have no such restriction. MacColl (1971) describes other pressures from organized medicine to inhibit HMOs in the early efforts of the 1930's and 1940's.

There are also legal barriers which stem from the misclassification of HMOs as a form of corporate medicine, as insurance-indemnity plans, or as a form of Blue Shield plan. These barriers are primarily:

- (1) state laws which forbid HMOs on the grounds that they are a form of corporate medicine;
- (2) Blue Shield laws which limit the operations of medical service plans not under the control of physicians; and
- (3) insurance regulations which require large financial reserves, limit insurance rates to levels not in keeping with the HMO services provided, and limit asset holdings, again not in keeping with the HMO concept which pays in service, not money.

The legal barriers appear to be partially resolved in the Act, however. Special federal override of restrictive state laws for assisted and qualified HMOs is provided. Yet there is a real question as to the

impact of the Act in the long run. Since the financial assistance program is limited to five years, states with restrictive laws may end up with one or just a few HMOs, creating virtual monopolies in the area served. If this were to happen, one of the objectives of the Act, which is to assure competition among HMOs as a means of controlling the quality of care provided, could not be met.

IV. HMOs: THE COMPETITIVE EDGE, AN ANALYSIS
OF THE BASIC REQUIREMENTS

In this section we analyze the basic requirements of the HMO Act--the comprehensive scope of services, the community rating, and the open-enrollment policy.

Unlike the previous sections, which compared the HMO with the fee-for-service system, in this section we compare the HMO with its market competitor, the insurance option. In effect, we assume the consumer's decision is really focused on how much, and in what combinations, insurance protection is desired, and secondly, whether the HMO or the insurance option is preferable. The insurance option is presumed to be complementary with respect to the fee-for-service system. The question being posed is how competitive is the HMO with respect to insurance?

HMOs VERSUS INSURANCE VERSUS FEE-FOR-SERVICE HEALTH CARE

HMOs are unique in that they offer insurance-like coverage and direct health care service, as a single product--a joint product. This joint product is more than the addition of the two types of products, however. The HMO offers its enrollees the additional good or service, which for the lack of a better name may be called "coordination" or "continuity" of total health care. In the usual fee-for-service market, an individual seeking health care may be referred from one physician to another, or from one institution to another. With a change of provider, there is no guarantee of continuity or coordination of treatment. Under the HMO an individual enrollee has some assurance that a knowledgeable provider (or team of providers) is responsible for coordinating his overall care and treatment.

Even in the absence of unique HMO services, for analytical purposes the addition of the two types of services is not sound. First, insurance and health care are complementary goods, or at least there is reason to believe that insurance changes the effective price of health care. There is also reason to believe that the demand or expected demand for health care affects the demand for insurance--self-selection. And finally,

using the moral hazard argument, the presence of insurance tends to increase the demand for health care by reducing the incentive for self-care.

A second and more interesting reason why HMO services cannot be viewed as the simple summation of two types of services, each of which has its own market, is that HMOs provide a different type of each service from what is normally sold in the two separate markets.

HMO insurance-like benefits are generally prepackaged at some minimal level of coverage. On the other hand, underwriting allows insurance coverage to be more flexible. Secondly, while both involve the use of premiums, there are additional costs that vary between them. The insurance costs include coinsurance rates and deductibles, while HMO coverage costs include copayments. Copayments may be fixed nominal fees which vary for different types of services, e.g., office versus house calls. Copayments may be said to vary with the use of service as well as with the type of service, whereas coinsurance rates vary with the cost of services.

Comparing the HMO with the fee-for-service system, there are a number of important differences that affect the degree to which they are substitutable. While there is no reason to believe that the quality and range of services in an HMO differ from that found in the fee-for-service system, there are expected to be differences in the method of delivery as well as the mix of services actually provided. First, the HMO provides care through a panel of physicians who have voluntarily affiliated with the HMO. The fee-for-service system allows a wider choice of physician and taps into a wider referral system. Second, the HMO ideally places a greater emphasis on preventive and maintenance care relative to the fee-for-service system.

The following discussion will assume that the decision is to purchase some combination of health insurance. Given this decision, we analyze the conditions under which the individual will choose HMOs over health insurance and by association the fee-for-service system, to attain the desired outcome. In so doing, we shall point out problems and make suggestions and hypotheses relating to the specific definition of HMOs used by the HMO Act of 1973.

The decision to purchase some combination of health insurance will depend on the amount of money available to spend on health insurance, the preferences for different types of health insurance, the expected risk, and the relative prices of each. To simplify the analysis, we assume that some prior decision has been made as to the total amount of money allocated to health insurance, given that the relative price of health insurance is already known to the consumer. Further, we assume that health insurance can be divided into hospital insurance and all other health insurance. We use this dichotomy since hospital insurance is the most commonly purchased health insurance, and secondly, HMOs and health insurance do have the greatest consistency with respect to hospital insurance coverage.

One of the major obstacles to analyzing the decision of how health insurance coverages will be combined lies in the unit of measure. Ideally, there would be a unit of measure which captures the degree of comprehensiveness of coverage. Hospital coverage varies with the number of days covered, and the use of exclusions and limitations. Exclusions and limitations pose difficult problems. For example, blood may be an excluded benefit, as might be coverage for certain preconditions. Limits may be placed on maternity benefits by the use of a waiting period. These units of coverage have been defined so as to exclude cost or price effects, which would be best left to the budget constraint. This is difficult since hospital coverage may be extended by added cost-sharing provisions.

Another obstacle is to determine prices or relative prices. In the simplest case, premiums are the prices, yet they apply to a bundle of insurance coverages. The payment of a premium may be allocated by an estimated cost function, which gives the marginal cost of purchasing one more unit of hospital coverage, or one more unit of dental coverage, and so on.* Assuming perfect competition, the marginal cost is the price. The individual will allocate his health insurance budget such that the

* See U.S.H.R., *Health Maintenance Organizations--1973 Hearings* before the Subcommittee on Public Health and Environment, 93rd Congress, 1st Session, March 6 and 7, 1973, pp. 88-91.

ratio of the marginal utilities is equal to the ratio of the prices:

$$M_I = P_H X_H + P_O X_O$$

$$U_I = f(U_H, U_O)$$

$$\frac{MU_H}{MU_O} = \frac{P_H}{P_O}$$

where M_I = health insurance budget

U_I = utility derived from health insurance

P_H = price of hospital insurance

P_O = price of other health insurance

X_H = number of hospital insurance units

X_O = number of other health insurance units

The analysis thus far applies only to the pure health insurance coverage choice, and does not imply anything regarding the choice between HMO coverage and insurance policy (and the associated use of the fee-for-service system).

We now assume that the insurance policy option is completely consistent with the pure health insurance policy choice. If we further assume that the HMO is completely price-competitive with the insurance policy, the only difference will be in the HMO method of bundling of insurance coverages and the method of delivering the services, as well as the added services of "coordination."

SCOPE OF BENEFITS

Under the Act, the enrollee purchases a fixed minimum package, the basic benefits, which includes physicians' services, inpatient and outpatient hospital services, medically necessary emergency health services, short-term (not to exceed 20 visits) outpatient mental health services, medical treatment and referral services for the abuse of or addiction to alcohol and drugs, diagnostic laboratory and diagnostic and therapeutic radiologic services, home health services, and preventive health services. Other health services, so-called supplemental health services,

must be made available (provided the necessary manpower is available) to the enrollee who contracts for such services, at additional cost, i.e., higher premiums and/or copayments.

Graphically, we may depict the HMO situation as a minimum point (C) with a vertical and horizontal boundary to the right giving the feasible set of HMO benefit packages, the supplemental benefits. Superimposing the HMO option on the insurance policy option, the optimal choice, we have a number of cases (Fig. 1):

1. The HMO options are outside the budget constraint.
2. The HMO options are within the budget constraint, but do not coincide with the optimal choice.
3. The HMO option is consistent with the optimal choice.

In Case 1, the HMO has "priced" itself out of the reach of the individual by offering a minimal package that is too comprehensive, or "overinsuring." Case 2 will not lead to an HMO selection unless the individual is willing to sacrifice some of his utility, i.e., he sub-optimizes. Case 3 is the more interesting case. Theoretically, the individual will be indifferent. At this point other complicating factors may be brought to bear. First, the individual may correctly perceive that the HMO option involves certain costs of converting from one option to another. Second, the individual may weigh, positively or negatively, other aspects linked to the delivery of service, e.g., the choice of physician, or the added service of "coordination." These noninsurance factors may be incorporated either by using two indifference maps, one for HMOs and one for insurance policies with the associated use of the fee-for-service system. Or, alternatively, they may be incorporated by moving the budget constraint by some monetarized value of the net advantage or disadvantage of receiving health care through the HMO, (B_{HMO}). We have chosen the latter. (See Fig. 2.)

Assuming that the HMO is price-competitive with the insurance option, we find that the HMO is likely to be selected if:

1. The HMO does not offer a benefit package significantly more comprehensive than what is normally purchased in the health insurance market, and/or

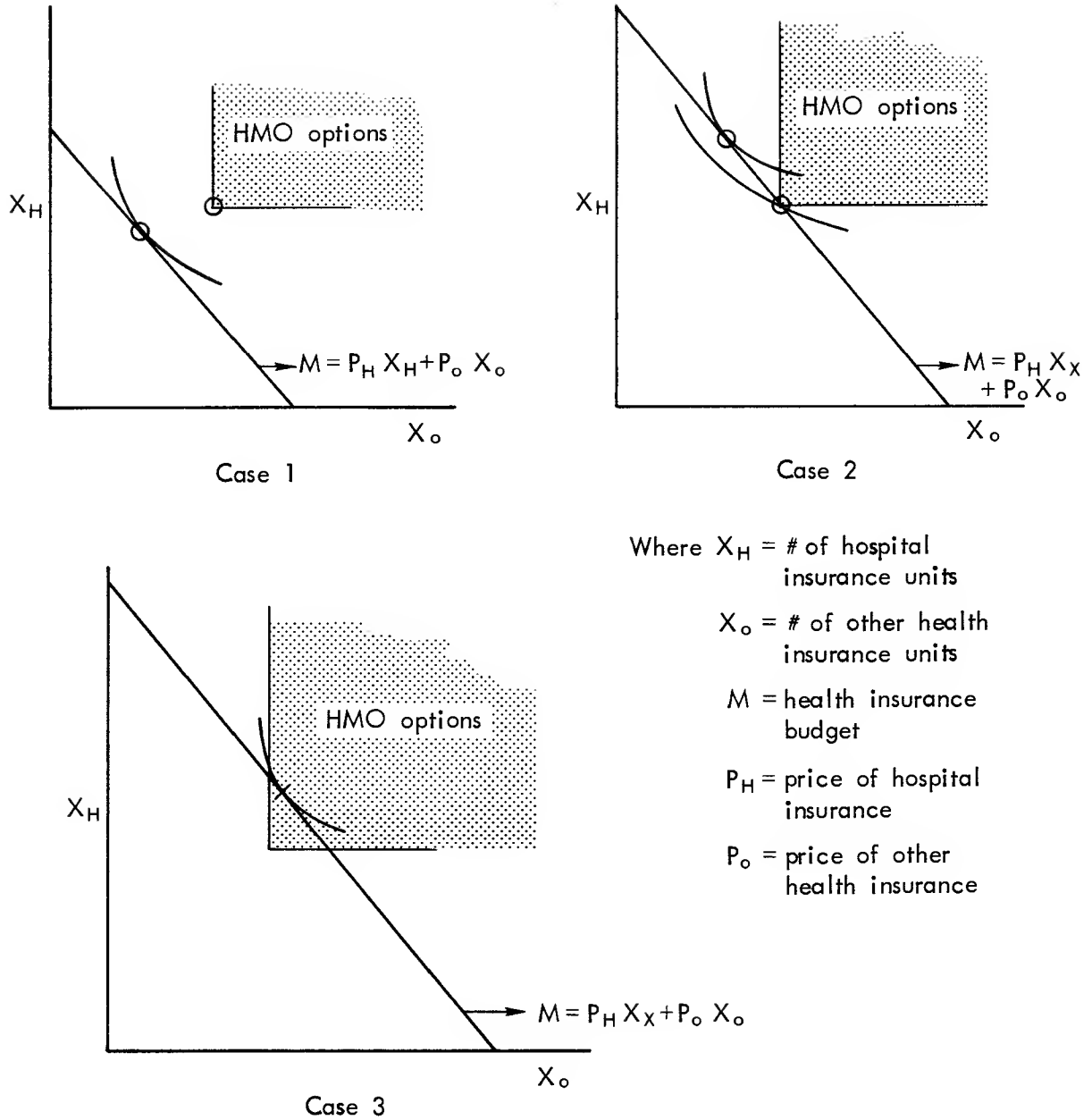
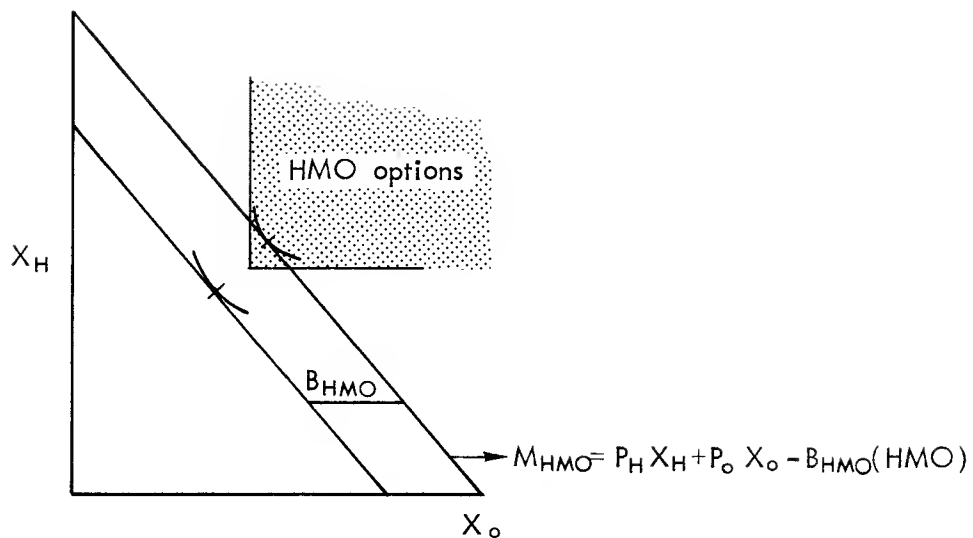


Fig. 1—Utility maximization and the choice of health insurance



Where X_H = # of hospital insurance units

X_o = # of other health insurance units

M_{HMO} = HMO health insurance budget

P_H = price of hospital insurance

P_o = price of other health care insurance

B_{HMO} = net advantage or disadvantage of receiving health through HMO

Fig.2—Utility maximization and choice of health insurance, accounting for differences in delivery of health care

2. The HMO is positively regarded with respect to the noninsurance aspects, the mode of delivering services, and the emphasis on preventive care, and light weight is given to the restricted choice of physician or hospital or referral access.

Up to this point in the discussion, we have not touched upon the topic of expected risk. This subject is best handled at the aggregate level. At the aggregate level it is likely that the high-risk persons will be more willing to allocate larger amounts of money, all things being equal, and will thus be able to afford the minimum HMO package. The attractiveness of HMOs to high-risk persons, however, is best explained under the open-enrollment-policy section.

Next, we assume that HMOs are not price-competitive with the insurance policy option. There are two opposing views. First, HMOs have been attributed with being able to control costs by taking advantage of cost-saving practices, substituting less costly preventive care for more expensive curative care, etc. If this is true, HMOs should be able to provide the same insurance coverage at lower costs, and theoretically in lower premiums. Second, HMOs may have higher costs due (1) to the need to provide comprehensive services that may not be utilized to the extent required for economies to be effective, and (2) to the extent that high-risk persons are attracted to HMOs which increase utilization and overall costs.

The HMO Act of 1973 defines a minimum scope of services to be offered in the basic package, and further adds that the HMO must be prepared to provide other supplementary services. We hypothesize that few of the operating HMOs can meet these service requirements. Further, we hypothesize that meeting these service requirements would result in relatively high HMO costs and, in turn, will limit the attractiveness of the HMO option to low-risk persons.

COMMUNITY RATING

In comparing HMOs to insurance plans, we find another major difference--the method of determining premiums. Insurance companies such as Blue Cross have in the past relied on community rating to determine the

level of premiums which is fixed and uniform for all enrollees, irrespective of risk. McIntyre (1962) traces out the switch of Blue Cross to the experience rating system used by their competitors, the commercial insurance companies. The experience rating system allows premiums to vary with the expected risk based on a past experience, risks actually incurred (loss and expense experience) or other judgmental methods. Experience rating is an important mechanism for attracting low-risk persons or groups by lowering premiums. Community rating, on the other hand, is attractive to high-risk persons who are effectively being subsidized by low-risk persons still in the pool. Community rating invites adverse selection.

HMOs, according to the Act, are required to use community rating, unlike their competitors, the health insurers. Rates are allowed to vary between individuals, small groups, and large groups, to the extent they capture differences in administrative costs of collecting payments. In addition, the Act stipulates that Medicare and Medicaid covered persons and groups need not be community rated.

The exception to Medicare and Medicaid is well taken. The aged and the poor probably capture a significant group of high-risk persons. Under Medicaid, two distinctions are made: the poor who are on cash assistance, and the medically indigent who are poor because of unusual medical expenses. States, which administer and define the programs, have varying criteria for eligibility and also have the option of not providing benefits for the medically indigent, probably the highest risk group. We hypothesize that HMOs in states that have Medicaid coverage for the medically indigent will be better off than those in states without such coverage, and also that these HMOs will have a greater percentage of Medicaid enrollees. A similar hypothesis is that HMOs in states with more liberal Medicaid eligibility criteria (as well as reimbursement criteria) will be better off, all things being equal. One prominent case in point is that of California, which has a very liberal Medicaid program and the largest share of the HMOs by far, many of which cater to the Medicaid population.

Community rating is not likely to have the negative impact of adverse selection to the extent that Medicare and Medicaid do in fact

capture high-risk persons. For employed groups, there still are possibilities of adverse selection. For example, high-risk occupations (e.g., coal miners) will probably be highly priced by insurers, but within the HMO context they will be able to pool their risk with others and thereby lower their premiums.

The potential for adverse selection appears to be nonnegligible. We would hypothesize that high-risk persons (or persons with lower health status) will tend to choose the HMO option over the insurance option. Should this be the case, any savings that the HMO could make through more efficient use of resources would be eliminated or seriously jeopardized in serving high-risk persons, who would, through the community rating system, increase the premiums. As the premiums approach the insurance option, more persons will be indifferent. Once the HMO premiums increase above the insurance option's premiums, then there is likely to be a withdrawal of low-risk persons, which in turn will further increase the premiums.

It might be noted that low-risk persons or households may still be attracted to the HMO, particularly if they expect to utilize the preventive maintenance heavily. For example, the young householder with young children may benefit from the preventive care services.

Why community rate? First there is the ideological argument that the HMO's cost of providing care to the community should be borne equally by all members of the community. In effect, it argues that there are certain positive externalities in having a healthy community, and that it is proper for the healthier groups to subsidize the less healthy groups. Second, there is the precedent set by the Blue Cross-Blue Shield plans, which have been community oriented. McIntyre (1962), however, contends that there is also a cynical justification for community rating--it is a form of bad debt insurance for hospitals. That is, the community subsidizes equally the bad debts of persons who, for bad health or low income or other reasons, cannot afford to pay provider charges, and cannot purchase insurance to do so.

OPEN ENROLLMENT AND DISENROLLMENT POLICY

The HMO Act requires that an HMO have a minimum of 30 days of open enrollment for every 12-month period. This requirement need not apply if it can be demonstrated that this policy will compel the HMO "to enroll a disproportionate number of individuals who are likely to utilize its services more often than an actuarially determined average..." and "will jeopardize its economic viability" or "will not have a population broadly representative of the various age, social and income groups within the area it serves," or is beyond its capacity to increase enrollment.

Certainly the ability to demonstrate a person's high risk is subject to all sorts of problems. Given that we suspect the presence of adverse selection, HMOs will have to be particularly careful. Yet, if HMOs expand rapidly and have excess capacity, as we suspect, HMOs may be willing to fill in slots with high-risk persons, or at least not be too anxious to deny them, rather than leave slots empty and operate with losses.

The Act further states that an HMO cannot disenroll members because of health status or requirements for health services. Once high-risk persons enter via open enrollment or regular enrollments, the HMO must accept the consequences. This may serve to counter the argument that HMOs will be loose in their review of enrollees, but it does not counter the argument that they may not be able to do so accurately.

We might distinguish between short-term and long-term HMO enrollment criteria. If we assume that HMOs have large fixed costs, the new HMO being below its capacity may be more willing to fill slots with high-risk persons. The well-established HMO at or near its capacity, on the other hand, may be more concerned with the long-run costs of caring for high-risk persons, and screen more carefully. We would suspect large fixed costs given the comprehensive minimum benefit package required by the law. If we are correct, this would imply that the stiff requirements of the law may result in the encouragement of HMOs that may not be viable in the long run.

The HMO predecessors, the group practice prepaid plans, tended to use group contracts with employed groups. Employed groups were reasoned

to be healthier than unemployed groups. As long as the prepaid plans could be assured that those groups signing up were associated by means other than health reasons, adverse selection would be minimized.

The preference for group enrollments is strong. In the planning stages, an HMO is often dependent on enrolling a single, large group in order for it to become operational. Once operational, it becomes more costly for the HMO to effect an individual sign-up as compared to a group option. For example, it has been estimated that approximately 22 percent of the premium received is used to effect a sign-up of an individual Medicare patient (Health Maintenance Organizations, 1971, p. 80). As a result, the proportion of individual enrollments is small and is usually the result of group conversion options. HIP New York, for example, had 19.8 percent of its enrollment based on nongroup contracts: 2.9 percent Medicare, 10.6 percent Medicaid, and 6.3 percent other. Given that Medicare and Medicaid have special provisions, only 6.3 percent is the true individual share (December 31, 1968). Another example is the case of Kaiser, which had 13.0 percent listed as non-group in March 1971. A further breakdown was not available, but it is suspected that group conversion and others will leave the pure individual enrollment very much reduced from 13.0 percent (Texas Instrument, 1971).

Prepaid plans and insurance plans use a number of methods to avoid adverse self-selection. HIP New York does minimal screening to deny enrollment (Jones, et al., 1974). Other methods besides screening to deny enrollment are: to allow enrollment subject to getting insurance for preconditions, or getting to some level of health status which then requires normal maintenance care before entry, or outright exclusion of coverage or limitations on coverage.

HIP (Jones, et al., 1974, p. 6) also noted that open enrollment did tend toward more favorable selection, in the case of the Medicare population. Also, the Westat study (1975) noted that the Medicaid group which entered GHA on a special experiment did tend to have greater utilization of services than normal GHA members, although lower than their fee-for-service counterparts.

Open enrollment thus seems to hold special problems for HMOs if their insurance competition are not likewise required to do the same.

It might also be added that there are other requirements imposed on HMOs by the Act which seem most likely to increase administrative and other overhead costs. These requirements are clearly aimed at assuring quality control and making the HMO more consumer and community responsive. These requirements are (1) continuing education for physicians, (2) a representative governing body, (3) a quality assurance program, (4) a grievance procedure, and (5) a reporting system for evaluating performance. It should be noted that if these other requirements do in fact have an impact on improving the quality of care and consumer satisfaction, there may be compensating benefits in the long run.

Each one must be questioned as to their impact on the cost of running an HMO, and their effectiveness or perhaps redundancy in maintaining the virtues of the HMO's presumed advantages.

We may summarize the above discussion by following a simple model which compares the premiums of the insurance option (with a fee-for-service coverage) and the premiums of the HMO coverage. We begin with individual (i) who has characteristics (K) and thus falls into the jth group. Four assumptions are made as follows:

- o The HMO and the insurance companies have the same representative population, and the jth group is the national average. The experience rating of the jth group is thus equal to the community rating in the HMO, with the representative pool (\bar{p}).

$$M_j = \bar{M}_p = M$$

- o The HMO coverage is equal to the minimum benefit package stipulated by the Act and is also available in the insurance market.

$$M_{j\ell} = \bar{M}_{p\ell} = M_\ell$$

- o The HMO may be able to provide coverage (ℓ) at higher or lower cost relative to the fee-for-service sector by some factor of efficiency (a), which is automatically reflected in the premiums.

$a \bar{M}_{p\ell}^- = \text{HMO cost of providing } (\ell) \text{ coverage}$

$a > 1$ if HMO is less efficient

$0 < a < 1$ if HMO is more efficient

- o The HMO provides services in a mode which may be valued negatively or positively relative to the fee-for-service mode, which affects the real cost of the HMO option. The monetarized advantage/disadvantage of the HMO mode is (b).

$b < 0$ if HMO is viewed negatively

$b > 0$ if HMO is viewed positively

The i th individual will thus compare the HMO premium and the insurance premium for the same (ℓ) coverage as follows:

insurance option vs. HMO option

$$M_{j\ell} \quad \text{vs.} \quad a \bar{M}_{p\ell}^- - b$$

The individual will choose whichever is less expensive

$$\text{since } M_{j\ell} = \bar{M}_{p\ell}^- = M_{\ell}$$

$$\text{then } M_{\ell} \text{ vs. } a M_{\ell} - b$$

The HMO will be chosen if $a < 1$ and/or $b > 0$, that is if the HMO is more efficient in providing health care services and/or the HMO is viewed positively.

If we assume that individual (i) has taken the insurance option, and after one period was reassessed as having a higher (lower) risk, his premiums will be increased (decreased) by some monetarized value of added risk (d). The choice then becomes:

$$M_{j\ell} + d \text{ vs. } a \bar{M}_{p\ell}^- - b$$

where $d >$ if individual has higher risk

$d <$ if individual has lower risk

The individual with a higher risk than the average thus has a higher probability of selecting an HMO everything else (e.g., a, b) being constant. This adverse selection may be countered by low-risk persons having a $b > 0$, or HMOs having a higher efficiency factor, $a < 1$.

In the next round, if the HMO is found to be chosen by a greater proportion of high-risk persons, the HMO pool will change, and the premiums will increase, by some monetarized value of a higher risk pool.

$$\bar{M}_p \Rightarrow (\bar{M}_p + e)$$

where e is the monetarized value of a higher risk pool.

The comparison for individual (i) in the j th group is:

$$M_{j\ell} \text{ vs. } a(\bar{M}_{p\ell} + e) - b$$

The higher risk individual, however, will face the following choice:

$$M_{j\ell} + d \text{ vs. } a(M_{p\ell} + e) - b$$

$$\text{or } M_{\ell} + d \text{ vs. } a(M_{\ell} + e) - b$$

The most generalized choice is thus:

$$M_{\ell} + d \text{ vs. } a(M_{\ell} + e) - b$$

Since the individual will choose the lower premium, the HMO will be chosen when: d is greater (the individual making the choice has higher risk); a is lower (HMOs are more efficient relative to the fee-for-service sector in delivering health care); e is lower (HMOs are less subject to adverse selection or have positive self-selection); and b is positive and large (HMOs are viewed positively).

The same analysis may be conducted for different levels of coverage, that is ($\ell + 1, \dots \ell + n$) coverages.

This model may be used to identify some of the impacts of the HMO Act requirements:

- o *Scope of service requirements.* If the HMO package is "significantly" more comprehensive than what is normally purchased in the insurance market, the purchasers will be limited unless b --the monetarized value of HMO advantages over the fee-for-service is positive and large. Second, we would suspect that a --the efficiency of the HMO mode will be adversely affected if the scope of service requirement is "significantly" more

than what is currently offered by established HMOs. That is to say that increasing the scope of services will reduce the potential of some of the economies or cost saving in HMOs. Thirdly, that as the coverage increases, more adverse selection is likely to take place, i.e., higher risk persons will be disproportionately more likely to choose the HMO option and raise e--the monetarized value or cost of a higher-than-average risk pool.

- o *Community rating.* If the insurance companies are not similarly required to community rate, the insurance company can more easily underprice the HMO for lower risk groups. Lower risk groups have premiums $(M + d)$ where d is less than zero, in the insurance option, but the HMO premium of $a(M + e) - b$ is the same for all persons, at least on the margin.
- o *Open enrollment.* To the extent that insurance companies can be selective with respect to their members and HMOs cannot, the e will be greater, and the relative HMO price for a given coverage higher, all things being equal.
- o *Other requirements.* Other requirements such as a quality assurance program may increase the positive value of b ; that is, persons may feel that the HMO has more quality control over the fee-for-service system. But these requirements may also increase a , by adding to the cost of providing service.
- o We might also add that the likelihood of adverse selection measured by e is a function of the relative values of b as perceived by the different risk groups, as well as a , the relative worth of a dollar of coverage in an HMO over the fee-for-service sector.

To sum up, the major problem of the HMO appears to hinge on it being in balance with the health insurance market. Premiums that are too low will increase up to the market price. However, once the HMO premiums increase above the competitive price for health insurance, healthy persons will opt out, causing premiums to increase and, in turn, leading to adverse selection. The requirements for a comprehensive minimum

package which is above what is normally purchased in the health insurance market is the main reason for this need for delicate balancing. The community rating system which does not allow favorably experienced groups or individuals to gain or to receive lower premiums, and the open-enrollment policy which allows for greater probability of self-selection, increase the likelihood of adverse selection, and thus threaten the delicate balance the HMOs must maintain to be competitive.

V. MANDATORY MULTIPLE CHOICE: STIMULATING DEMAND

Up to this point we have focused on the demand factors related to the product mix (scope of services) and the relative prices of the HMO versus insurance policy options (for example, the effects of adverse selection). We now turn to one of the more positive elements of the HMO Act--the stimulus to demand for HMO coverage on the part of employer groups.

While we cannot directly or empirically assess the effectiveness of this provision, we find that its strength is subject to the same problems mentioned earlier. The Act cannot directly encourage the demand for HMO coverage; it only assures that whenever there is an HMO in the area which is certified (i.e., has met the requirements imposed by the Act), has the capacity to accept enrollees, and has requested inclusion, an employer subject to the Fair Labor Standards Act (FLS) must offer this HMO option to his employees or their union. The employer is not required to increase his share of the health benefit plan to accommodate differential HMO premiums. The inclusion of the HMO option then becomes subject to individual employee decisions as outlined previously.

These multiple choice regulations were finally published in February 1975. This delay caused marketing problems for many existing and developing HMOs, which had counted on this dual-choice option to stimulate demand for HMOs. The smaller, developing HMOs were especially hard-pressed by this delay. At the time of this writing there are still debates over certain portions of the regulations. Union representatives are concerned about who has final authority to select or reject an HMO option. The National Association of Manufacturers has introduced an amendment which would require an employer to offer an HMO option only if 25 or more employees reside in a given area, rather than as it is presently stated requiring employers to offer the HMO option in any areas in which an employee lives, regardless of the number of employees residing in a specified area.

Regardless of the regulations which are eventually adopted regarding multiple choice, a number of questions still remain, the answers to which

will affect the potential benefit of the multiple choice option:

- o How many HMOs are certified, and of those that are certified, how many enrollment slots are available?
- o Of the firms subject to the multiple choice provision by the FLS Act, how many are colocated with the enrollment openings of a certified HMO?
- o Where suitable conditions hold, what is the price differential between the current plan and the HMO option?
- o Where dual choice occurs, what percentage of the employees can be expected to opt for HMOs over the established carrier?

While we do not presently have the answers to these questions, we do have pieces of information which serve to shed some light on the direction these factors will take in stimulating demand.

As of May 1975, only two HMOs have been certified. Five additional HMOs have submitted applications to HEW for qualification under the HMO Act, but many have no intentions of seeking certification at this time. Other HMOs, including the six Kaiser plans, have been cautiously seeking HMO certification. One of the major barriers to HMOs seeking certification is the extensive scope of services required by the Act. We would expect the older, more established plans to be the most likely to be able to offer the scope of services required and yet the least likely to gain by increasing the demand for HMO coverage. Even a well-established plan like Kaiser, however, did not offer the minimum services required prior to their seeking certification. It is reported that the Ohio region Kaiser HMO had to add a dental program, and outpatient mental counseling, as well as expand its home health, family planning, and alcohol and drug abuse services in order to meet the requirements of the Act.

While we do not know the number of firms who are subject to the FLS Act and colocated with certified HMOs, we do know that by mid-1974, 81 percent of Fortune's top 500 corporations and 88 percent of Fortune's second 500 corporations did not offer an HMO option to their employees. An additional 3 percent of the companies were in the process of developing such an option, but 73 percent indicated that they would take no

action until the final regulations for the Mandatory Multiple Choice section were published. The reluctance of employers to offer the HMO option prior to it being mandatory is understandable. Although the employer will not be required to increase his share of the cost of the health benefit plan, the firm will need to bear the administrative cost of offering multiple options and educating the employees. There also appears to be a high degree of variability in the percentage of employees within a firm which choose an HMO under the dual-choice option. These percentages range from a low of 2 percent to a high of 80 percent. Factors which have been identified as affecting this rate include: geographical area; involvement of employees in union activities; knowledge of choice and the plan; relationship of employee to a physician, his current plan, and his hospital; and the stability of the HMO. In cases where the employee groups initially were provided a dual-choice option, enrollment in the two plans run about equal. When an HMO option is offered after another plan has become established, the degree of enrollment in the HMO is much less. (Donabedian, 1969, pp. 3-7.)

Therefore, while the Mandatory Multiple Choice option will act as an important stimulant on the demand for HMOs, nevertheless, the vast majority of the employees will elect to remain with their current plan. In addition, it is likely that the HMO rates will be higher than what the employee currently pays, given the comprehensive scope of services required of HMOs. Even if we were to assume the best conditions, our prior analysis would hold--the demand requirements imposed on HMOs are not likely to result in a dominant role for HMOs.

VI. HMOs SINCE THE ACT OF 1973

Over 18 months have elapsed since the HMO Act was first published. At the end of 1973, there were 116 HMOs known to be operating (see Table 1). Given the lack of a common or rigorous definition of HMOs, and the lack of national data keeping, that figure includes GPPPs that do not fully comply with the HMO Act definition and fails to include others that are not widely known. As of the first quarter of 1975, there were 181 known operating HMOs. The net difference of 65 additional operating HMOs hides the fact that in 1974, there were 33 insolvencies.

Since the HMO Act, only two organizations have become certified as HMOs. In addition, only \$10 million of the \$60 million available has been obligated--\$9 million were awarded as grants and \$1 million as loans. As a result, HEW requested only \$18 million for HMO development during FY 1976. The reason for such a slow development of HMOs could be traced to the many restrictions placed on the organizations by the Act itself. These restrictions, such as the comprehensive scope of services, the open enrollment policy, community rating, and the like, and their attendant consequences, have been discussed at length in this report and have led us to conclude that as presently conceived, HMOs will not be a viable alternative in the health care delivery system. Others apparently shared our concerns. On June 12, 1975, amendments to the Health Maintenance Organization Act of 1973 were introduced in the Senate and the House. Under the proposed amendments, some of the more stringent requirements in the existing law would be removed. Specifically, the amendments would (1) make the supplemental health benefits package optional with the HMO; (2) remove preventive dentistry for children, treatment for alcoholism and drug abuse, and home health services from the basic required benefits package to the supplemental benefits package; (3) eliminate the requirements that HMOs offer annual open-enrollment periods for individual members; (4) eliminate the requirement that members of a medical group in a prepaid group practice model HMO devote more than 50 percent of their professional activities to the HMO (51

Table 1
OPERATIONAL HMOs^a

| | <u>Nov.</u> <u>1973</u> | <u>Jan.</u> <u>1974</u> | <u>Apr.</u> <u>1974</u> | <u>July</u> <u>1974</u> | <u>Oct.</u> <u>1974</u> | <u>Jan.</u> <u>1975</u> | <u>Apr.</u> <u>1975</u> | <u>Net</u> <u>Change</u> |
|-------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Alabama | .. | .. | .. | .. | .. | .. | .. | .. |
| Alaska | .. | .. | 1 | 1 | 1 | 1 | 1 | +1 |
| Arizona | 4 | 5 | 6 | 5 | 5 | 4 | 4 | .. |
| Arkansas | .. | .. | .. | .. | .. | .. | 1 | +1 |
| California | 43 | 63 | 68 | 67 | 77 | 81 | 76 | +33 |
| Colorado | 2 | 2 | 4 | 5 | 4 | 4 | 4 | +2 |
| Connecticut | 2 | 2 | 2 | 2 | 2 | 2 | 2 | .. |
| Delaware | .. | .. | .. | .. | .. | .. | .. | .. |
| District of Columbia | 3 | 3 | 4 | 3 | 3 | 3 | 3 | .. |
| Florida | .. | 3 | 3 | 3 | 5 | 4 | 4 | +4 |
| Georgia | .. | .. | .. | .. | .. | .. | .. | .. |
| Hawaii | 4 | 2 | 3 | 3 | 3 | 3 | 2 | -2 |
| Idaho | .. | .. | .. | .. | .. | .. | .. | .. |
| Illinois | 5 | 6 | 6 | 8 | 7 | 7 | 9 | +4 |
| Indiana | .. | 1 | .. | .. | .. | 1 | 1 | +1 |
| Iowa | .. | .. | .. | .. | .. | .. | .. | .. |
| Kansas | .. | .. | 1 | 1 | 2 | 2 | 2 | +2 |
| Kentucky | 1 | 2 | 3 | 3 | 4 | 4 | 4 | +3 |
| Louisiana | .. | .. | .. | .. | .. | .. | .. | .. |
| Maine | 2 | 2 | 2 | 2 | 2 | 2 | 2 | .. |
| Maryland | 4 | 2 | 2 | 2 | 3 | 3 | 2 | -2 |
| Massachusetts | 1 | 3 | 3 | 4 | 4 | 4 | 4 | +3 |
| Michigan | 5 | 3 | 4 | 4 | 5 | 4 | 4 | -1 |
| Minnesota | 7 | 7 | 7 | 7 | 8 | 8 | 8 | +1 |
| Mississippi | .. | .. | .. | .. | .. | .. | .. | .. |
| Missouri | 3 | 3 | 3 | 4 | 4 | 4 | 3 | .. |
| Montana | .. | .. | .. | .. | .. | .. | .. | .. |
| Nebraska | .. | .. | .. | .. | .. | 1 | 1 | +1 |
| Nevada | 1 | 1 | 1 | 1 | 2 | 1 | 1 | .. |
| New Hampshire | 1 | 1 | 1 | 1 | 1 | 1 | 1 | .. |
| New Jersey | 1 | 1 | 1 | 1 | 1 | 1 | 2 | +1 |
| New Mexico | 2 | 2 | 2 | 2 | 2 | 2 | 2 | .. |
| New York | 4 | 6 | 6 | 6 | 6 | 6 | 6 | +2 |
| North Carolina | ... | .. | .. | .. | .. | .. | .. | .. |
| North Dakota | .. | .. | .. | .. | .. | .. | .. | .. |
| Ohio | 1 | 2 | 2 | 3 | 3 | 3 | 3 | +2 |
| Oklahoma | .. | .. | .. | .. | .. | .. | .. | .. |
| Oregon | 3 | 3 | 3 | 3 | 3 | 3 | 3 | .. |
| Pennsylvania | 4 | 2 | 7 | 6 | 6 | 7 | 8 | +4 |

^aData taken from InterStudy's Census of HMOs.

(continued)

Table 1 (continued)

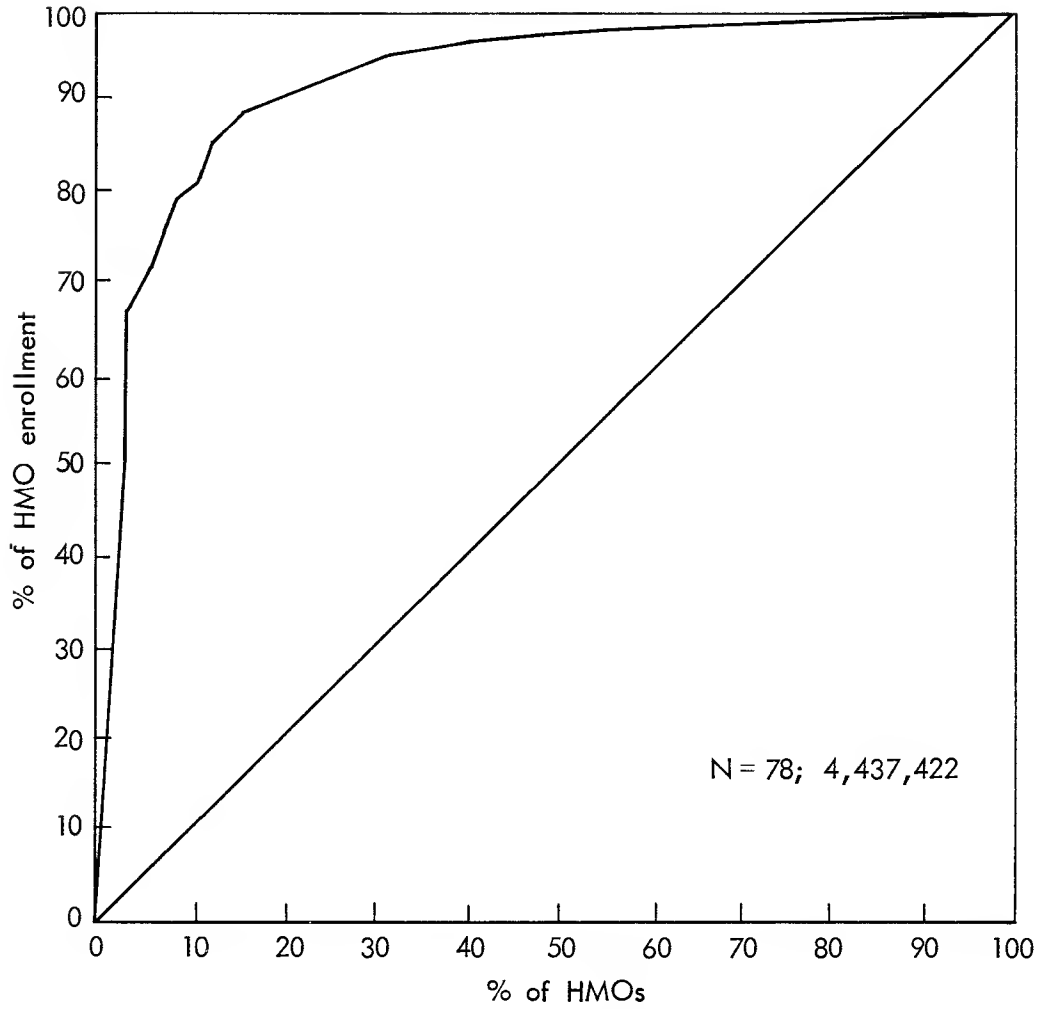
| | <u>Nov.</u> <u>1973</u> | <u>Jan.</u> <u>1974</u> | <u>Apr.</u> <u>1974</u> | <u>July</u> <u>1974</u> | <u>Oct.</u> <u>1974</u> | <u>Jan.</u> <u>1975</u> | <u>Apr.</u> <u>1975</u> | <u>Net</u> <u>Change</u> |
|----------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Rhode Island | 2 | 2 | 2 | 2 | 2 | 2 | 2 | .. |
| South Carolina | 1 | .. | .. | .. | .. | .. | 1 | .. |
| South Dakota | .. | .. | .. | .. | .. | .. | .. | .. |
| Tennessee | .. | .. | .. | .. | .. | .. | 1 | +1 |
| Texas | 1 | 1 | 1 | 1 | 1 | 2 | 2 | +1 |
| Utah | 1 | 1 | 1 | 1 | 1 | 1 | 1 | .. |
| Vermont | .. | .. | .. | .. | .. | .. | .. | .. |
| Virginia | .. | .. | .. | .. | .. | .. | .. | .. |
| Washington | 3 | 3 | 3 | 4 | 5 | 5 | 5 | +2 |
| West Virginia | .. | 2 | 2 | 1 | 1 | 1 | 1 | +1 |
| Wisconsin | 5 | 6 | 6 | 5 | 4 | 6 | 5 | .. |
| Wyoming | .. | .. | .. | .. | .. | .. | .. | .. |
| Total | 116 | 142 | 160 | 161 | 177 | 183 | 181 | +65 |

percent rule); (5) eliminate the necessity for an individual practice association to establish a separate entity; (6) allow an HMO to phase in community rating over a five-year period beginning when the HMO becomes qualified; and (7) provide procedures under which qualified HMOs may become unqualified.

Thus, if these amendments should become enacted, several of the more restrictive requirements--the comprehensive scope of services and the open-enrollment policy--will have been lifted and, subsequently, HMOs will be able to be more competitive with other health insurance plans. HMOs will still be required to community rate, as opposed to other insurance plans, but the potential for adverse selection has been reduced by the elimination of the open-enrollment requirement and, thus, the detrimental effects of community rating will in all likelihood be reduced as well. The effects of these amendments on the development of HMOs remains to be seen; however, they are a necessary first step in creating a more viable incentive for the growth and proliferation of the HMO concept in the U.S.

Data on HMOs to date is limited in the sense that it is aggregated, or if detailed, is not comparable across HMOs. InterStudy data are at the present time the most complete. After reviewing the various censuses and reports put out by InterStudy, we find the following:

- o HMOs vary widely with respect to enrollment size. Previous to the Act, InterStudy surveyed HMOs. Seventy-eight HMOs responded with a total enrollment of 4,437,422. Ordering the HMOs from large to small, a cumulative percent of HMOs and a cumulative percent of enrollment curve was derived to show the degree to which HMO enrollment is concentrated in a few large HMOs. Two of the largest HMOs (2.6 percent) had 50.5 percent of total HMO enrollment. The five largest HMOs (6.4 percent) had 75.7 percent of total HMO enrollment. (See Fig. 3.) In 1974, there were 137 HMOs surveyed by InterStudy showing the largest growth in relatively small HMOs, those less than 5,000 and those between 5,000 and 25,000. (See Table 2.)



Source: InterStudy, HMOs in 1973: A National Survey
(February 1974).

Fig. 3— 1973 Operational HMOs and Enrollment Concentration

Table 2

NUMBER OF OPERATIONAL HMOs

| <u>Enrollment Size</u> | <u>1974</u> | <u>1973</u> |
|------------------------|-------------|-------------|
| 0-4,999 | 69 | 37 |
| 5,000-9,999 | 24 | 23 |
| 10,000-24,999 | 20 | |
| 25,000-99,999 | 15 | 12 |
| 100,000-999,999 | 6 | 3 |
| 1,000,000 + | <u>3</u> | <u>2</u> |
| | 137 | 77 |
| | 6.5 million | 4.5 million |

Source: InterStudy

- o HMO expansion has been a phenomena of the pre-HMO-Act period. By the end of 1970, there were 41 operational HMOs; by the end of 1973, there were 133. During the 1974 calendar year an additional 49 HMOs became operational. The first quarter of 1975 saw the emergence of only 1 HMO. Underlying this growth (net growth) is a good deal of HMO failure, particularly the later HMOs. Data by state suggests that there is a good deal of formational and planning activity among prospective HMOs, but few are actualized.
- o HMOs are also highly concentrated in a few states. Fifteen states have no operational HMOs. The bulk of the HMO activity is in California with 76 operational HMOs on April 1, 1975, and 44.5 percent of the total HMO enrollment. Other states with 5 or more HMOs are Illinois, Minnesota, Pennsylvania, New York, Washington, and Wisconsin. The remaining states have less than 5 HMOs. The number of HMOs, however, does not correlate very well with size of state HMO enrollment. (See Tables 3 and 4.)

Table 3

OPERATIONAL HMOs PER STATE, JANUARY 1975

| <u>Number of HMOs</u> | <u>Frequency</u> | <u>Total Number</u> | <u>Percent Enrollment</u> |
|---------------------------|------------------|-------------------------|-------------------------------|
| 76 | 1 | 76 | 44.5 |
| 9 | 1 | 9 | 1.1 |
| 8 | 2 | 16 | 2.2 |
| 6 | 1 | 6 | 12.4 |
| 5 | 2 | 10 | 24.2 |
| 4 | 6 | 24 | 4.6 |
| 3 | 4 | 12 | 7.2 |
| 2 | 9 | 18 | 3.3 |
| 1 | 10 | 10 | .5+ |
| 0 | 15 | 0 | ... |

Source: InterStudy, Census of HMOs,
January 1975.

Table 4

SUMMARY OF RECENT HMO ACTIVITY

| | FMAP ^a | Required ^b Services | Number of HMOs April 1975 ^c | Enrollment January 1975 ^d | Medicare & Medicaid Enrollment January 1975 ^e | Number of HMOs Operational Since January 1974 ^f | Formational and Planning HMOs April 1975 ^g |
|---------------|-------------------|-----------------------------------|---|---|---|---|--|
| | | | | Number | % | | |
| Alabama | 78 | C | 0 | | | 0 | 2 |
| Alaska | | | 1 | 7,400 | .. | 1 | 1 |
| Arizona | | | 4 | 43,279 | 6,211 | 1 | 1 |
| Arkansas | 79 | C | 1 | | 14 | 1 | 0 |
| California | 50 | M | 76 | 2,875,901 | 390,360 | 24 | 60 |
| Colorado | 58 | C | 4 | 70,743 | 5,977 | 3 | 3 |
| Connecticut | 50 | M | 2 | 35,477 | 266 | 0 | 5 |
| Delaware | 50 | C | 0 | | | 0 | 1 |
| D. C. | 50 | M | 3 | 109,514 | 6,036 | 0 | 5 |
| Florida | 61 | C | 4 | 2,882 | 150 | 1 | 12 |
| Georgia | 70 | C | 0 | | | 0 | 5 |
| Hawaii | 51 | M | 2 | 113,201 | 7,166 | 0 | 3 |
| Idaho | 72 | C | 0 | | | 0 | 4 |
| Illinois | 50 | M | 9 | 70,864 | .. | 2 | 13 |
| Indiana | 55 | C | 1 | 450 | .. | 1 | 4 |
| Iowa | 58 | C | 0 | | | 0 | 1 |
| Kansas | 59 | M | 2 | 1,645 | .. | 1 | 1 |
| Kentucky | 73 | M | 4 | 18,336 | 60 | 2 | 3 |
| Louisiana | 73 | C | 0 | | <1 | 0 | 7 |
| Maine | 69 | C | 2 | 6,634 | 2,595 | 0 | 0 |
| Maryland | 50 | M | 2 | 25,663 | 4,402 | 2 | 10 |
| Massachusetts | 50 | M | 4 | 53,966 | 2,390 | 1 | 15 |
| Michigan | 50 | M | 4 | 106,364 | 29,698 | 1 | 14 |
| Minnesota | 57 | M | 8 | 100,906 | 1,757 | 1 | 9 |
| Mississippi | 83 | C | 0 | | | 0 | 1 |

(continued)

Note: For footnotes, see p. 56.

Table 4 (continued)

| FMAP ^a | Required Services ^b | Number of HMOs April 1975 ^c | Enrollment January 1975 ^d | Medicare & Medicaid Enrollment January 1975 ^e | | Number of HMOs Operational Since January 1974 ^f | Formational and Planning HMOs April 1975 ^g |
|-------------------|--------------------------------|--|--------------------------------------|--|----|--|---|
| | | | | Number | % | | |
| 60 | C | 3 | 46,190 | 1,744 | 4 | 0 | 7 |
| 67 | C | 0 | | | | 0 | 0 |
| 58 | M | 1 | 1,200 | .. | .. | 1 | 4 |
| 50 | C | 1 | 3,500 | 20 | <1 | 0 | 0 |
| 59 | M | 1 | 1,000 | .. | .. | 0 | 0 |
| 50 | C | 2 | 4,000 | .. | .. | 1 | 17 |
| 73 | C | 2 | 8,000 | .. | .. | 0 | 1 |
| 50 | M | 6 | 798,655 ^h | 117,590 | 15 | 1 | 24 |
| 73 | M | 0 | | | | 0 | 3 |
| 71 | M | 0 | | | | 0 | 2 |
| 54 | C | 3 | 116,898 | 4,364 | 4 | 1 | 9 |
| 69 | M | 0 | | | | 0 | 2 |
| 57 | C | 3 | 191,566 | 11,124 | 6 | 0 | 6 |
| 55 | M | 8 | 42,578 | 11,350 | 27 | 6 | 10 |
| 50 | M | 2 | 15,878 | 359 | 2 | 0 | 1 |
| 78 | C | 1 | | | | 0 | 2 |
| 70 | C | 0 | | | | 0 | 1 |
| 74 | C | 1 | | | | 0 | 8 |
| 65 | C | 2 | 4,500 | | | 1 | 17 |
| 70 | M | 1 | 14,100 | 4,600 | 33 | 0 | 3 |
| 65 | M | 0 | | | | 0 | 1 |
| 64 | M | 0 | | | | 0 | 4 |
| 50 | M | 5 | 1,414,419 | 328,080 | 23 | 1 | 6 |
| 77 | C | 1 | 7,299 | 1,815 | 25 | 0 | 3 |
| 58 | M | 5 | 147,187 | 1,351 | 1 | 0 | 3 |
| 63 | C | 0 | | | | 0 | 2 |
| 618 | | 181 | 6,460,195 ⁱ | 939,465 ^j | 15 | 0 | 316 |

Note: For footnotes, see p. 56.

Table 4 footnotes:

^aFMAP--Federal Medicaid Assistance Percentage, based on state per capita income. Holahan (1975), Table 2-4, p. 19-21.

^bRequired Services--C = offered for persons receiving federally supported financial assistance; M = offered also for persons in public assistance categories who are financially eligible for medical but not for financial assistance. Holahan, *ibid.*

^cNumber of HMOs April 1975--InterStudy.

^dEnrollment January 1975--InterStudy.

^eMedicare & Medicaid Enrollment January 1975--InterStudy.

^fNumber of HMOs operational since the enactment of the program, January 1974, is 54. Note, however, as of April 1975 there were only 181 HMOs and 33 insolvencies.

^gNumber of Formational and Planning HMOs--InterStudy, *A Census of HMOs, April 1975*, Table 1.

^hEnrollment for New York does not include HIP of New York, which is considered a "quasi-HMO" by InterStudy--InterStudy.

ⁱTotal enrollment January 1975 includes 2,025,580 enrollees (or 31 percent of total) in nine quasi-HMOs--InterStudy.

^jTotal Medicare and Medicaid HMO enrollment includes 428,074 enrollees (or 46 percent of the total) in eight quasi-HMOs.

- o There is some evidence of the significant role played by Medicare and Medicaid in HMO development. The total enrollment attributed to Medicare and Medicaid covered persons is 15 percent, some states having as much as 39 percent. States that provide Medicaid coverage for the medically indigent tend to have a higher percent of Medicare and Medicaid enrollment, although this is not as strong as we might expect (Table 4). The role of Medicaid is two-edged. On the one hand, Medicaid provides large enrollment contracts which allow for rapid expansion of any HMO. On the other hand, these contracts cause instability since they may not be renewed. It would also seem reasonable that any HMO dependent on large Medicaid contracts is not likely to be attractive to other group or individual enrollments--i.e., the HMO would appear to be providing second-class medicine. Three out of eleven HMOs were removed from the InterStudy HMO Census in April 1975 because of a loss of a Medicaid contract.

It is further noted that in the case of California, the two large Kaiser plans have only 4 percent Medicare or Medicaid enrollment. Netting out Kaiser, the Medicare and Medicaid percentage increases to 55. (January 1975 InterStudy Census of HMOs.)

- o Few HMOs are in rural areas. The January 1975 Census of HMOs found a total of 17 HMOs, or 9 percent of the total 183, in fourteen states. Most HMOs are located in the larger SMSAs.
- o The breakdown of HMO enrollment by type of enrollment indicates a heavy reliance on large group contracts and minimal reliance on individual enrollment (see Table 5). This would tend to suggest that a strict open-enrollment policy is not likely to be welcomed. Few HMOs currently have an open-enrollment policy (personal communication, 1975, with R. Schlenker, InterStudy).

Table 5

JULY 1974 ENROLLMENT IN MEMBER CATEGORIES

| Category | Total | Percent |
|-------------------------------------|-----------|---------|
| Medicare recipients | 169,534 | 4.1 |
| Medicaid recipients | 242,051 | 5.9 |
| Federal employees | 414,624 | 10.1 |
| State, county, city employees | 327,813 | 7.9 |
| Other (non-federal) employed groups | 2,378,297 | 58.0 |
| Individual enrollees | 434,936 | 10.6 |
| Other | 132,207 | 3.2 |

The comparison of HMO activity through time is difficult because of the lack of reliability of HMO data. For example, two states identified as having no HMOs in 1974 were later found to have operational HMOs, while two states thought to have HMOs were later dropped because they did not fit the InterStudy definition. To date, the data are not presented by plan in a systematic manner, despite the fact that there are many variations among HMOs. The InterStudy definition is broad enough to encompass many group practice prepayment plans, but not flexible enough to include HMO prototypes such as HIP of New York. InterStudy, however, does include them as quasi-HMOs in aggregate figures. There are also little data on benefit coverage or staff size, which would be relevant for more in-depth analysis of HMO efficiency.

HMOs AND THE HMO ACT OF 1973

As of August 4, 1975,^{*} there were a total of 172 grants awarded, totaling \$22.6 million. The bulk of the grants, 109, were for feasibility studies, 31 were for planning grants, and 32 for development grants. About 60 percent of the money was allocated to development grants, 23 percent to feasibility study grants, and 17 percent to planning grants.

^{*}*NHI Reports*, Vol. 5, No. 15, August 4, 1975, and *Congressional Quarterly*, August 9, 1975, p. 1771-6.

Of the 172 grants, 24 were for medically underserved areas and 32 for nonmetropolitan areas. Assuming no overlap between these two priority areas, these grants totaled \$4.17 million, or 18.5 percent.

Since October 1974, there has been a 21 percent increase in the number of HMOs and an 8 percent increase in HMO enrollment. In addition, 23 states have amended their laws to permit development of HMOs.

On the surface, it appears that the HMO Act has stimulated the growth of HMOs. This growth may be illusory, however. First, it is not clear that the expansion has been the result of the Act, since there was a rapid expansion in the number of HMOs just prior to the Act as well. Second, the Act provides for subsidies which will end after five years. These subsidies may be encouraging the growth of HMOs which are not economically viable independent of these subsidies and, thus, some of these new HMOs may not be sustainable in the long run. Further study is needed to measure the demand for HMOs, the incidence of adverse selection, and the effects of alternative HMO benefit packages on both the demand for and the cost of providing these benefits, in order to assess whether or not HMOs will play a major role in the delivery of health care.

CONCLUSION

Theoretically, HMOs provide the appropriate financial incentives to control the costs of health care. To date, however, this has not been conclusively proven. While the purpose of the HMO Act of 1973 was to demonstrate the potential of the HMO concept and to provide financial and nonfinancial assistance to new and existing HMOs, it has drawn criticism, particularly from HMO supporters. As previously noted, amendments to the 1973 HMO Act are in preparation, which are aimed at correcting the same weaknesses in the Act that we have identified--the comprehensive scope of benefits, community rating, and open enrollment. These amendments in essence serve to reduce the requirements under the Act in order to improve the economic feasibility of the HMO and its ability to compete with the insurance fee-for-service alternative. We do not feel that these amendments will affect the financial incentives of HMOs to control health care costs, which are based on the prepayment aspect.

The purpose of the comprehensive scope of services is to maximize the full potential of health care cost control; however, the effect has been to force HMOs to cover services which are expensive and may not normally be purchased in the market. The open enrollment and community rating requirements were intended to demonstrate the effectiveness of the HMO concept in serving populations not now presently covered. The difficulty HMOs are experiencing in meeting these requirements raises the question of whether the HMO is a viable approach to take in covering these populations. Given the difficulty with HMOs as they are presently concerned, one wonders whether they could, in fact, be economically viable without their competitors--the insurance companies--being required to operate under the same constraints, or the federal government continuing to underwrite part of the cost of HMOs through subsidies.

BIBLIOGRAPHY

- Bailey, Richard M., "Economies of Scale in Medical Practice," in Klarman (ed.), *Empirical Studies in Health Economics*, Johns Hopkins Press, Baltimore, 1970.
- Bates, Barbara, and Joel A. Yellin, "The Yield of Multiphasic Screening," *JAMA*, Vol. 222, No. 1, October 2, 1972.
- Bionetics Research Labs, Health Systems Research Program, Department of Health, Education, and Welfare, *Marketing of Health Maintenance Organization Services*, Vols. I to V, February 1972.
- Brook, Robert H., "Quality Assurance: The State of the Art," *The Hospital Medical Staff*, March 1974.
- "Changes Sought in 1973 HMO Legislation," *Congressional Quarterly*, August 9, 1975, pp. 1171-1176.
- Collen, Morris F., et al., "Dollar Cost Per Positive Test for Automated Multiphasic Screening," *The New England Journal of Medicine*, Vol. 283, No. 9, August 27, 1970.
- Commerce Clearinghouse, Inc., Pension Plan Guide, *1974 Social Security and Medicare Explained--Including Medicaid*, 1974, pp. 323-333.
- Corbin and Krute, "Some Aspects of Medicare Experience with Group Practice Prepayment Plans," *Social Security Bulletin*, Vol. 38, No. 3, March 1975.
- Donabedian, Avedis, "An Evaluation of Prepaid Group Practice," *Inquiry*, Vol. 6, No. 3, September 1969, pp. 3-27.
- Ellwood, Paul M., "Restructuring the Health Delivery System--Will the Health Maintenance Strategy Work?," *Health Maintenance Organizations: A Reconfiguration of the Health Services System*, University of Chicago, 1971.
- Federal Register*, "DHEW, Public Health Service: Health Maintenance Organizations," Vol. 39, No. 203, Part III, October 18, 1974.
- Glasgow, John M., "Prepaid Group Practice as a National Health Policy: Problems and Perspectives," *Inquiry*, Vol. IX, No. 1, March 1972.
- Greenburg, Ira G., and Michael L. Rodburg, "The Role of Prepaid Group Practice in Relieving the Medical Care Crisis," *Harvard Law Review*, Vol. 84, No. 4, February 1971, pp. 887-1001.
- Havighurst, Clark C., "Health Maintenance Organizations and the Market for Health Services," *Law and Contemporary Problems*, Part II, Vol. XXXV, No. 4, Autumn 1970.

- HMO and Health Services Report*, Vols. 1 and 2, 1974 and 1975 monthly issues (Girade Associates, Inc.).
- Health Maintenance Organizations: A Reconfiguration of the Health Services System*, Center for Health Administration Studies, University of Chicago, May 1971.
- Holley, Carlson, "The Legal Context for the Development of HMOs," *Stanford Law Review*, Vol. 24, No. 4, April 1972.
- Jones, Ellen W., et al., "HIP Incentive Reimbursement Experiment: Utilization and Costs of Medical Care, 1969 and 1970," *Social Security Bulletin*, Vol. 37, No. 12, December 1974.
- Klarman, Herbert, "Analysis of the HMO Proposal--Its Assumptions, Implications and Prospects," *Health Maintenance Organizations: A Reconfiguration of the Health Services System*, University of Chicago, 1971.
- , "Approaches to Moderating the Increases in Medical Care Costs," *Medical Care*, Vol. VII, No. 3, May-June 1969.
- LeRoy, Lauren B., *A Study of the Feasibility of Providing Health Care Services to the Disabled in a Health Maintenance Organization*, Working Paper 216 (RSO 23), Institute of Urban and Regional Development, University of California, Berkeley, August 1973.
- MacColl, William A., "Group Practices and Prepayment of Medical Care," *Public Affairs Press*, Washington, D.C., 1971.
- McIntyre, Duncan M., "Voluntary Health Insurance and Rate Making," *Cornell University Press*, Ithaca, New York, 1962.
- McNeil, Richard, Jr., and Robert E. Schlenker, *A Census of HMOs*, Inter-Study, Minneapolis, Minnesota, August 1973.
- Newhouse, J. P., *The Economics of Group Practice*, The Rand Corporation, P-4478-1, January 1972.
- Roy, William R., *The Proposed Health Maintenance Organization Act of 1972*, Sourcebook Series, Vol. 2, Science and Health Communications Group, Washington, D.C., 1972.
- Schweitzer, Stuart O., "The Economics of the Early Diagnosis of Disease," paper presented before a session of the Econometric Society, Toronto, Canada, December 1972.
- Starr, Paul, "Perspectives on HMOs--the New Medicine," *The New Republic*, April 1975.
- Texas Instruments, Inc., *Development of an Implementation Plan of a Health Maintenance Organization*, December 1971.

- U.S. House, Committee on Interstate and Foreign Commerce, *Health Maintenance Organizations, Part 2*, Hearings before the 92nd Congress, 2nd Session, on H.R. 5615 and H.R. 11728, Serial 92-89, April 11-13, May 2-4, 9-11, 16-18, 1972.
- U.S. House, Committee on Interstate and Foreign Commerce, *Health Maintenance Organization Act of 1973*, Report 93-451, 93rd Congress, 1st Session, August 10, 1973.
- U.S. House of Representatives, Subcommittee on Public Health and Environment of the Committee on Interstate and Foreign Commerce, *Health Maintenance Organizations--1973 Hearings*, 93rd Congress, 1st Session, Serial 93-26, March 6-7, 1973.
- U.S. Senate, Conference Committee, *Health Maintenance Organization Act of 1973 Conference Report* (to accompany S.14), Report 93-621, 93rd Congress, 1st Session, December 13, 1973.
- U.S. Senate, Committee on Labor and Public Welfare, *Health Maintenance Organization and Resources Development Act of 1972* (to accompany S.3327), Report 92-978, 92nd Congress, 2nd Session, July 21, 1972.
- U.S. Senate, Subcommittee on Health of the Committee on Labor and Public Welfare, *Health Maintenance Organization Act of 1973, S.14, Explanations of Act and Text of Public Law 93-222*, 93rd Congress, 2nd Session, February 1974.
- Vecchio, Thomas, "Predictive Value of a Single Diagnostic Test in Unselected Populations," *The New England Journal of Medicine*, Vol. 274, No. 21, May 26, 1966.
- Waybur, Anne, "Analysis of Diverse Modes of Organization for Medical Care of the Poor," Ph.D. dissertation, UCLA, 1974.
- Weil, Roman, "Benefits from Screening for Cervical Cancer do not Appear to Justify its Cost," unpublished paper, University of Chicago, Graduate School of Business.
- Westat, Inc., *Evaluation of the Costs of Medical Care Provided to D.C. Medicaid Enrollees in a Prepaid Group Practice*, January 27, 1975.
- Wetherille, Rhona L., *A Census of HMOs, Quarterly Report*, InterStudy, Minneapolis, Minnesota, November 1973.
- , *A Census of HMOs*, InterStudy, Minneapolis, Minnesota, January 1975.
- Wetherille, Rhona L., and Jean M. Nordby, *A Census of HMOs*, InterStudy, Minneapolis, Minnesota, October 1974.
- , *A Census of HMOs*, InterStudy, Minneapolis, Minnesota, April 1975.

Wetherille, Rhona L., and Jean N. Quale, *A Census of HMOs*, InterStudy, Minneapolis, Minnesota, February 1974.

-----, *A Census of HMOs*, InterStudy, Minneapolis, Minnesota, April 1974.

-----, *A Census of HMOs*, InterStudy, Minneapolis, Minnesota, July 1974.

Wolkstein, Irwin, "Medicare 1971: Changing Attitudes and Changing Legislation," *Law and Contemporary Problems*, Vol. 35, No. 4, Autumn 1970.

